



Air Quality Permitting Statement of Basis

April 11, 2008

Tier II Operating Permit and Permit to Construct No. T2-030515

Basic American Foods, Rexburg

Facility ID No. 065-00008

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PROPOSED FOR PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclatures

AAC	Annual Ambient Concentration for non-carcinogens
AACC	Acceptable Ambient Concentrations for carcinogens
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MRU	Material Recovery Unit
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO ₂	sulfur dioxide
TAPs	toxic air pollutants
Tier II/PTC	Tier II operating permit and permit to construct
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, *Rules for the Control of Air Pollution in Idaho* (Rules) for Permits to Construct and Tier II operating permits.

2. FACILITY DESCRIPTION

The Basic American Foods (BAF) Rexburg facility produces a variety of dehydrated food products for both internal use and for external customers. Products include potato granules, formulated dehydrated food products, dehydrated whole and piece food products, and animal feed. BAF uses a variety of dehydration technologies to produce products to meet exacting customer specifications. The main sources of air emissions include boilers, dryers, dehydration lines, pneumatic material transfer and packaging operations.

3. FACILITY / AREA CLASSIFICATION

The Rexburg facility is a major facility for purposes of the Title V program as defined under IDAPA 58.01.01.008.10 because the actual or potential emissions of several criteria pollutants exceed 100 tons per year. The AIRS classification is “A.”

The Rexburg facility is not a major facility for purposes of the PSD/NSR program as defined under IDAPA 58.01.01.205.01 (40 CFR 52.21(b)(1)) because it does not have the potential to emit a regulated criteria air pollutant in amounts greater than or equal to 250 tons per year. The facility is not a “designated facility” according to the definitions in IDAPA 58.01.01.006.30. The Rexburg facility does contain fossil-fuel boilers, but the total potential fossil-fuel Btu input is less than 250 MMBtu per hour. The two natural gas boilers have a total Btu input of 87 MMBtu/hr and the Kipper boiler is allowed to burn up to 50% heat input on coal, which is 45 MMBtu per hour, for a total fossil-fuel input of 132 MMBtu/hr.

The facility is located within AQCR 61, UTM zone 12 and Madison County. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants. The SIC is 2034 which represents establishments primarily engaged in artificially dehydrating fruits and vegetables, including “potato flakes, granules, and other dehydrated potato products.”

The EPA AIRS database information will not change as a result of issuance of this permit.

4. APPLICATION SCOPE

On May 28, 2003, DEQ received an application from BAF to obtain a facility-wide Tier II operating permit and Permit to Construct (Tier II/PTC) for the Rexburg facility to accomplish the following:

- To meet the requirements of Tier I Permit Conditions 9.2 and 9.3 (compliance schedule);
- To address Tier II and PTC requirements for construction projects potentially requiring a PTC but for which a PTC was not obtained prior to construction;
- To issue a facility-wide Tier II operating permit which maintains compliance with the NAAQS and which limits the facility’s potential to emit to less than the PSD thresholds.

4.1 Application Chronology

May 28, 2003	DEQ received a facility-wide Tier II permit application.
August 8, 2003	DEQ declared the application complete.
September 16, 2003	DEQ requested NAAQS compliance information.
October 21, 2003	DEQ received NAAQS compliance plan information from BAF.
October 23, 2003	DEQ clarified the NAAQS compliance information request to BAF.
December 1, 2003	DEQ received a NAAQS compliance schedule from BAF.
December 31, 2003	DEQ received a revised NAAQS compliance schedule from BAF.
January 5, 2004	DEQ received a modeling protocol from Coal Creek Environmental Associates.
February 10, 2004	DEQ received the Emissions Unit ID and Emission Factor Documentation, plus the associated performance test reports from BAF.
February 27, 2004	DEQ received a request from BAF to burn a wood-coal mix at the facility.
March 2, 2004	DEQ received a Modeling Scenarios Plan for NAAQS compliance from BAF.
April 5, 2004	DEQ notified BAF that the modeling documents received were approved.
April 15, 2004	DEQ received a request from BAF to expedite issuance of the permits.
May 2, 2004	DEQ received a revised Tier II application from BAF. The revised Tier II permit application included information on co-firing coal and wood in the Kipper boiler in accordance with the existing PTC for the Kipper boiler, removed requests for confidential treatment, and corrected some typographical errors.
May 25, 2004	DEQ received a revised model from Coal Creek Environmental Associates.
September 10, 2004	DEQ issued a draft Tier II permit to BAF for review.
November 2004	DEQ placed the project on an inactive backlog due to workload constraints.
December 10, 2004	BAF provided comments on the draft permit.
October 10, 2005	DEQ received an updated modeling analysis from BAF that excluded fugitive emissions from the woodpile.
June 2006	DEQ reactivated the project and began reviewing BAF's comments on the draft Tier II permit and the updated modeling analysis.
May 24, 2007	BAF submitted a letter requesting inclusion of facility emission cap (FEC) limits in the Tier II permit.
January 23, 2008	DEQ and BAF determined that this Tier II operating permit should be issued to address the compliance issues without FEC limits because BAF had not submitted an application amendment that includes FEC information.
February 15, 2008	DEQ issued a second draft Tier II operating permit and permit to construct to BAF for review
March 12, 2008	DEQ received comments on the draft permit from BAF via email

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II/PTC action.

5.1 Emissions Inventory and Equipment Listing

The equipment listing and emissions inventory for criteria pollutants from all sources at the BAF Rexburg facility is summarized in Table 5.1. This inventory summarizes the potential facility emissions following issuance of the Tier II/PTC.

Table 5.1 SUMMARY OF EMISSIONS INVENTORY

Basic American Foods, Rexburg										
Potential Emissions – Hourly (lb/hr), and Annual (T/yr)										
Source Description	PM₁₀		CO		NO_x		SO₂		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Kipper & Sons boiler	16.25	71.2	60.3	249	27.4	120	48.9	214.2	2.9	12.9
Boiler 1	0.39	1.7	4.3	18.8	5.1	22.3	0.12	0.5	0.28	1.2
Boiler 2	0.26	1.1	2.9	12.6	3.4	15.0	0.08	0.4	0.19	0.8
Process A										
Cooler/Dryer 7020 (Cooler vent) ^a	0.41	1.8	---	---	---	---	---	---	---	---
Cooler/Dryer 7101 (Dryer, 6.5 MMBtu/hr, natural gas-fired)	2.16	9.5	1.7	7.4	0.3	1.5	0.12	0.5	0.04	0.2
Cooler/Dryer 7102 (Dryer, 6.5 MMBtu/hr, natural gas-fired)	2.16	9.5	1.7	7.4	0.3	1.5	0.12	0.5	0.04	0.2
Cooler/Dryer 7019 (Dryer, 6.6 MMBtu/hr, steam and natural gas) ^a	3.39	14.8	1.7	7.5	0.3	1.5	0.22	1.0	0.04	0.2
Cooler/Dryer 7001 (Dryer, steam-heated)	0.23	1.0	---	---	---	---	0.03	0.1	---	---
Cooler/Dryer 7027 (Cooler)	0.04	0.2	---	---	---	---	---	---	---	---
Material Recovery Unit 7006	0.12	0.5	---	---	---	---	---	---	---	---
Process B										
Material Recovery Unit 5034 ^a	0.017	0.1	---	---	---	---	---	---	---	---
Cooler/Dryer 5037 (Cooler/dryer vent, dryer is steam heated) ^a	1.29	5.7	---	---	---	---	1.87	8.2	---	---
Cooler/Dryer 4000 (Dryer, steam heated) ^{a,b}	1.72	7.5	---	---	---	---	0.26	1.1	---	---
Cooler/Dryer 228, (Dryer, natural gas-fired, 16.1 MMBtu/hr) ^{a, b}	1.1	4.8	1.26	5.5	0.25	1.1	0.19	0.8	0.05	0.2
Cooler/Dryer 234, (Second exhaust from dryer 228) ^{a, b}	0.31	1.4	0.84	3.7	0.16	0.7	0.06	0.3	0.03	0.2
Cooler/Dryer 311, (Dryer, steam-heated) ^b	0.29	1.3	---	---	---	---	0.05	0.2	---	---
Cooler/Dryer 312, (Dryer, steam-heated) ^b	0.29	1.3	---	---	---	---	0.05	0.2	---	---
Cooler/Dryer 410/411, (Dryer vent, steam-heated) ^b	0.59	2.6	---	---	---	---	0.09	0.4	---	---
Cooler/Dryer 613/614, (Dryer vent, steam-heated) ^{a, b}	1.09	4.8	---	---	---	---	0.17	0.7	---	---
Cooler/Dryer 615/616, (Dryer vent, steam-heated) ^{a, b}	0.85	3.7	---	---	---	---	0.13	0.6	---	---
Cooler/Dryer 638 ^{a, b}	0.24	1.1	---	---	---	---	0.04	0.2	---	---
Material Recovery Unit 707 (fabric filter)	0.000	0.007	---	---	---	---	---	---	---	---
Material Recovery Unit 725 (fabric filter)	0.05	0.2	---	---	---	---	---	---	---	---
Material Recovery Unit 8 (fabric filter)	0.05	0.2	---	---	---	---	---	---	---	---
Material Recovery Unit 5001	0.24	1.1	---	---	---	---	---	---	---	---
Material Recovery Unit 5000 (fabric filter) ^a	0.05	0.2	---	---	---	---	---	---	---	---
Material Recovery Unit 432 (fabric filter) ^a	0.05	0.2	---	---	---	---	---	---	---	---
Material Recovery Unit 322 ^a	0.000	1.1	---	---	---	---	---	---	---	---
Material Recovery Unit 572 (Vent from material recovery cyclone in animal feed load-out system) ^a	0.19	0.8	---	---	---	---	---	---	---	---
Plant Heaters	0.23	0.5	2.5	5.6	3.0	6.6	0.07	0.2	0.17	0.4
Total Point Source Emissions	---	150	---	249^c	---	170	---	230	---	16
Fugitive Emissions Sources										
Woodpile	2.28	10.0	---	---	---	---	---	---	3.4	14.9
Facility Roads	3	15.0	---	---	---	---	---	---		
Total Fugitive Emissions	---	25.0	---	---	---	---	---	---	---	14.9

- ^a Source was constructed after 1969 without a PTC.
- ^b Each of the following Cooler/Dryer groups are considered to constitute a single emissions unit for permitting purposes: 4000, 228 and 234; 311, 312 and 410/411; 613/614, 615/616 and 638.
- ^c The PTC limits facility-wide CO emissions to 249 tons/yr, which includes the plant heaters.

5.2 Modeling

Refer to Appendix B, the air dispersion modeling technical memorandum.

5.3 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this permitting project.

IDAPA 58.01.01.201Permit to Construct Required

A PTC is required to address requirements for sources that required PTCs, but which were constructed without first obtaining PTCs, in accordance with Tier I Permit Condition 9.3, and to incorporate the Kipper boiler into the Tier II/PTC.

The following 12 projects were identified as changes potentially subject to this rule:

- Project 1: 1976, Installation of dryer and stacks 613/614, 615/616, and 638
- Project 2: 1983, Installation of MRU and stack 432
- Project 3: 1989, Installation of process cooler and stack 7020
- Project 4: 1993, Installation of dryers and stacks 5034 and 5037
- Project 5: 1993, Installation of MRU and stack 5000
- Project 6: 1994, Replacement of dryer associated with stack 7019
- Project 7: 1997, Installation 8.8 MMBtu/hr REYCO shop roof heater
- Project 8: 1997, Installation 8.8MMBtu/hr REYCO proctor roof heater
- Project 9: 1997, Installation of dryer and stack 4000
- Project 10: 1997, Installation of MRU and stack 572
- Project 11: 1999, Replacement of dryer and installation of stacks 228 and 234
- Project 12: date uncertain, Modifications to Ventri-Rod® scrubber system on Kipper Boiler

The applicability of Section 201 to each of these projects is discussed below.

- The following projects qualify for a Category I exemption from PTC permitting (per IDAPA 58.01.01.22) on the basis that the Potential to Emit is less than 10 percent of the Significant Emission Rate levels (as defined in IDAPA 58.01.01.006.92) and TAP emissions levels are Below Regulatory Concern (as defined in IDAPA 58.01.01.223.01)
 - Project 2: 1983, Installation of MRU and stack 432
 - Project 5: 1993, Installation of MRU and stack 5000
 - Project 10: 1997, Installation of MRU and stack 572

Project 12, modifications to the scrubber system, also qualifies for Category I exemption because this was a maintenance project that improved the operational reliability of the scrubber. The original design of the Ventri-Rod scrubber had movable rods which nominally allowed control of the head loss across the scrubber. These control mechanisms were difficult to maintain and were subsequently removed. Instead, additional rods and spray nozzles were added to replicate the previous operation of the scrubber under worst case conditions. It was with these additional rods and sprays in place that the CAM testing of 2006 was conducted. As demonstrated in source testing,

the modified scrubber performs at least as well as the unmodified scrubber, and with greater operational reliability. Accordingly, there was no emissions increase associated with this project.

- The following projects qualify for a Category I exemption from PTC permitting (per IDAPA 58.01.01.22) on the basis that the Potential to Emit is less than 10 percent of the Significant Emission Rate levels (as defined in IDAPA 58.01.01.006.92) and the uncontrolled ambient concentrations of TAPs are sufficiently low to qualify for a Level I Exemption (per IDAPA 58.01.01.223.02.b)
 - Project 7: 1997, Installation 8.8 MMBtu/hr REYCO shop roof heater
 - Project 8: 1997, Installation 8.8MMBtu/hr REYCO proctor roof heater

The following six projects do not qualify for an exemption from the PTC requirements of IDAPA 58.01.01.201:

- Project 1: 1976, Installation of dryer and stacks 613/614, 615/616, and 638
- Project 3: 1989, Installation of process cooler and stack 7020
- Project 4: 1993, Installation of dryers and stacks 5034 and 5037
- Project 6: 1994, Replacement of dryer associated with stack 7019
- Project 9: 1997, Installation of dryer and stack 4000
- Project 11: 1999, Replacement of dryer and installation of stacks 228 and 234

In addition to the projects discussed above, BAF installed an economizer on the Kipper Boiler in 2001. The installation of the economizer increased boiler efficiency without creating any changes in boiler combustion conditions. The Kipper Boiler now produces slightly more steam while combusting the same amount of fuel. Accordingly this project did not result in an increase in emissions and is therefore not a modification for air emissions permitting purposes.

IDAPA 58.01.01.401Tier II Operating Permits

BAF was required by Tier I Permit Condition 9.2, to apply for a Tier II. Based on the application received on May 28, 2003, and subsequent amendments, a Tier II operating permit has been prepared.

IDAPA 58.01.01.203.03.02Demonstration of Preconstruction Compliance with NAAQS

Compliance with the NAAQS has been demonstrated in the permit application. Refer to the modeling section above and Appendix B for details. For this analysis, fugitive emissions from roads and the woodpile were not included in the modeling because they are not constant emissions sources and their highest impacts do not coincide with those of the process stacks. The only pollutant found to be close to the NAAQS was PM₁₀, and the modeled results showed the estimated facility-wide impacts to be 92% of the 24-hour standard. The 24-hour standard was found to be the most limiting factor, therefore, emphasis has been placed on maintaining compliance with this standard, and compliance with the 24-hour standard will also demonstrate compliance with the annual standard. For this purpose, pound per hour emission rate limits were established for certain sources which could reasonably contribute to an exceedance of the PM₁₀ NAAQS. The limits were based on the emission rates used in the model to demonstrate compliance. For those sources, performance test requirements were also established where necessary to demonstrate that representative actual emissions from those sources will not exceed the permit limits.

PM₁₀ is clearly the most limiting factor with regard to all of the NAAQS. Compliance with the permit conditions established for PM₁₀ will also effectively limit emissions of other pollutants to less than the NAAQS as demonstrated in the permit application. Therefore short term emission rate limits for pollutants other than PM₁₀ are not necessary for purposes of maintaining compliance with the NAAQS.

The Kipper boiler is the largest PM₁₀ source at the facility. To ensure compliance with the NAAQS for this source a PM₁₀ emissions limit and corresponding operating, monitoring and recordkeeping requirements were established in the permit. The PM₁₀ limit is 16.3 lb/hr and this is based on the emission rate used in the model to demonstrate compliance with the NAAQS. Compliance with the NAAQS and the emission rate limit is also demonstrated through the requirement to perform periodic PM₁₀ source tests. When a mixture of wood and coal is fired in the Kipper boiler, coal consumption is limited to 50% of the heat input for purposes of maintaining compliance with the 24-hour PM₁₀ NAAQS, and this was determined as follows:

Compliance with the NAAQS was demonstrated at the rated boiler capacity = 90 MMBtu/hr heat input

Coal firing accounts for up to 50% of the capacity by heat content = 45 MMBtu/hr

$(45 \text{ MMBtu/hr}) / (19 \text{ MMBtu/ton}) = 2.4 \text{ tons/hr}$

$(2.4 \text{ tons/hr})(24 \text{ hr/day}) = 57 \text{ tons of coal per day}$

The average heat content of coal is given on page 43 of the February 10, 2004 BAF Emission Factor Documentation, as 9500 Btu/lb and this is consistent with EPA AP-42 page 1.1-1 which lists subbituminous coal as having 8300-11,500 Btu/lb on a wet, mineral-matter free basis and 9420-10,130 Btu/lb on an as-mined basis. On this basis, the subbituminous coal heat content is 19 MMBtu/ton, which is derived as follows: $(9500 \text{ Btu/lb})(2000 \text{ lb/ton}) = 19 \text{ MMBtu/ton}$.

Since the allowable coal combustion rate is based on compliance with the SO₂ emission limits, in addition to compliance with grainloading standards under IDAPA 58.01.01.676, the permittee may not be able to actually combust coal at this rate if it is later demonstrated through source testing that the grain loading standards can only be achieved at a lower combustion rate. This point is made in consideration of the uncertainty of estimating PM emissions from coal-firing given on AP-42 page 1.1-3: "The distribution of ash between the bottom ash and fly ash fractions directly affects the PM emission rate and depends on the boiler firing method and furnace type (wet or dry bottom). Boiler load also affects the PM emissions as decreasing load tends to reduce PM emissions. However, the magnitude of the reduction varies considerably depending on boiler type, fuel, and boiler operation."

A steam production limit of 65,000 pounds per hour (24-hour average) is established in the permit for purposes of maintaining compliance with the 24-hour PM₁₀ NAAQS.

For the natural gas-fired boilers and heaters, emission limits were not necessary since the model demonstrated that uncontrolled potential to emit from these emission units have a minimal impact on NAAQS compliance. The percent contribution for boilers 1 and 2 were low at approximately 1% of the total facility impact each, and the percent contribution for all of the plant heaters combined was 4%.

To demonstrate compliance with the emission rate limits for the processing units, sufficient operating, monitoring and recordkeeping requirements were added to the permit by limiting the corresponding production rates to the amount for which compliance was demonstrated in the permit application. For this purpose, production limits were established, based on the process operating rates used in the Facility's air quality impact analysis and presented in the application. The production limits were determined as follows:

- Process A: $5100 \text{ lb/hr} \times 24\text{hr/day} \times 1 \text{ ton}/2000 \text{ lb} = 61 \text{ ton/day}$
- Process B: $25,300 \text{ lb/hr} \times 24\text{hr/day} \times 1 \text{ ton}/2000 \text{ lb} = 304 \text{ ton/day}$

These limits apply to process operating units that produce dehydrated food products. Ancillary processes, such as materials transport are not included in this calculation. These units are assumed to operate at their own maximum operating rates.

Details for specific processing units are provided below.

An emission limit is not necessary for stack 7020 since this source is expected to have a minimal impact on NAAQS compliance because of the low emission rate. Confirmation of the low emission rate for stack 7020 was demonstrated by the information contained in test report “E” which was received from BAF as part of the February 9, 2004 Emissions Unit Identification Documentation. This test report was reviewed and found to be consistent with DEQ methods and procedures.

For stacks 7101 and 7102, emission rate limits are necessary even though these sources were constructed prior to 1969 and PTCs were not required. The limits are necessary because these sources will have higher emission rates than most of the other production sources at the facility and, therefore, a greater bearing on NAAQS compliance than those other sources. For stacks 7101 and 7102, the emission rate limit is 2.16 lb/hr for each stack, and this is based on the emission rates used in the NAAQS compliance demonstration model. The test information contained in test report “A” for similar units at the Blackfoot facility, which was received from BAF as part of the February 9, 2004 Emissions Unit Identification Documentation (see page 26), is not considered to be sufficient to represent emissions from the Rexburg units. Therefore, additional test information is specified for stacks 7101 and 7102 to demonstrate compliance with the emission rate limit and the NAAQS by demonstrating that the actual emissions do not exceed the emission estimates used to show compliance in the model.

Emission limits are necessary for stack 7019 since this source will have a greater bearing on NAAQS compliance for the facility than most of the other sources. This is because stack 7019 has higher emission rates than most of the other production sources. The emission limit for stack 7019 is 3.39 lb/hr. This limit is based on the emission rates used in the NAAQS compliance demonstration model. For stack 7019, additional test information is needed to demonstrate compliance with the NAAQS by demonstrating that the actual emissions do not exceed the emission estimates used to show compliance in the model.

For permitting purposes, the combined emissions from stacks 4000, 228, and 234 are considered to represent emissions from a single process/source and, therefore, emissions from these stacks are addressed as a group. An emission limit is necessary for the 3-stack group (i.e., 4000, 228, and 234) since this group of sources has a greater bearing on NAAQS compliance for the facility than most of the facility’s other sources. This is because this 3-stack group has a higher emission rate than most of the other production sources. When the emissions limits are coupled with the production rate limit in the permit, it will limit the emissions from the process to no more than the estimated emissions rate used for the NAAQS compliance demonstration.

For the process represented by stacks 4000, 228, and 234, additional test information is needed to demonstrate compliance with the NAAQS by demonstrating that the actual emissions do not exceed the emission estimates used to show compliance in the model (i.e., the emission rate limit). The test information may be obtained by testing any one of the following 3-stack groups which are all representative of the same source type: stacks 4000, 228, and 234; stacks 311, 312, and 410/411; and stacks 613/614, 615/616, and 638. The process/source associated with each of these stack groups are similar. Only a one-time test is required for this source type. This is based on consideration of the higher level of effort required to perform this 3-stack test plus expectation that the emissions rates and expected impacts for this source type are not large enough relative to the other PM₁₀ emission sources to justify periodic testing.

An emission limit is not necessary for stacks 7001, 7027, 7006, 5034, 5001, 322, 572, 707, 725, 8, 5000, and 432 since the estimated emissions and modeled impacts are low. Test data for similar units which are representative of these sources was received from BAF as part of the February 9, 2004 Emissions Unit Identification Documentation. Additional testing associated with most of these sources is not necessary at this time.

The annual emissions from the plant heaters included in the model were based on operations of less than full capacity. The emission estimate is based on operations of 4360 hours per year. Although the estimate provided is reasonable, the modeling guidance requires the modeling estimate to be performed at design capacity unless a federally enforceable permit condition allows the source to operate less. DEQ performed a sensitivity analysis on this assumption to determine whether a permit limit was needed to demonstrate compliance with the NAAQS. This sensitivity analysis included rerunning the model assuming the heaters operated 100% of the time for all pollutants and all averaging periods. The sensitivity analysis showed that these discrepancies did not make a difference in the design concentration and the demonstration of compliance with applicable standards. Therefore, operational limitations for the plant heaters were not added to the permit. There are currently 18 individual space heaters at the Rexburg facility in sizes ranging from less than 0.1 MMBtu/hr to 8.8 MMBtu/hr with a total combustion capacity of approximately 31 MMBtu/hr. The space heaters qualify for a category II exemption based on size. All heaters have a heat input capacity of less than 50 MMBtu/hr.

IDAPA 58.01.01.203.03 and 210.....Demonstration of Preconstruction Compliance with Toxic Standards

Toxic air pollutants (TAP) are emitted from the facility as a result of fuel combustion. Since the Idaho TAP standards became effective on June 30, 1995, these PTC rules apply only to sources constructed or modified after that date. For each modification project after June 30, 1995, the TAP rules apply only to the increase in TAP emissions associated with that particular modification. Of all the sources constructed or modified without a PTC, the only projects to which the TAP rules apply are those constructed or modified in/after 1995, and this includes the two REYCO heater projects in 1997 and the Cooler/Dryer 228/234 project in 1999. The TAP rules do not apply to the 1997 projects for Cooler/Dryer 4000 and Material Recovery Unit 572 since these sources have no burners or TAP emissions. The TAP rules do not apply to the Kipper boiler because the current permitting action does not constitute new construction or a modification of that source.

TAP emissions from the REYCO Heaters and Cooler/Dryer 228/234 are natural gas combustion byproducts from the 16.1 MMBtu/hr burners. An inventory of the TAPs which were found to exceed the screening emission level (EL) for the REYCO Heaters and Cooler/Dryer 228/234 are provided in Tables 5.2 and 5.3 and in Appendix A.

Table 5.2 SUMMARY OF REYCO HEATER TAP EMISSION INVENTORY

TAP	Emission Rate (lb/hr)	EL (lb/hr)
Arsenic	1.73E-06	1.5E-06
Cadmium	9.49E-06	3.7E-06
Formaldehyde	6.47E-04	5.1E-04

Table 5.3 SUMMARY OF COOLER/DRYER 223 and 234 TAP EMISSION INVENTORY

TAP	Emission Rate (lb/hr)	EL (lb/hr)
Arsenic	3.16E-06	1.5E-06
Cadmium	1.74E-05	3.7E-06
Formaldehyde	1.18E-03	5.1E-04
Nickel	3.31E-05	2.7E-05

For the TAPs with uncontrolled emission rates less than the applicable EL, no further procedures for demonstrating compliance are necessary under IDAPA 58.01.01.210.005. For the TAPs listed in Tables

5.2 and 5.3, the permittee has demonstrated through modeling that the uncontrolled ambient concentrations from each source are less than the applicable acceptable ambient concentrations (AAC). Therefore, no further procedures for demonstrating compliance are required under IDAPA 58.01.01.210.006 and 58.01.01.203.03. Details of the modeling analysis are provided in Appendix B.

IDAPA 58.01.01.205, 40 CFR 52.....Permit Requirements for New Major Facilities or Major Modifications in Attainment or Unclassifiable Areas; PSD

Analysis for the Tier II/PTC. Upon issuance of the Tier II/PTC, the Basic American Foods Rexburg facility will not be a major facility for purposes of the NSR/PSD program as defined under IDAPA 58.01.01.205.01 [40 CFR 52.21(b)(1)(i)(a), (b) and (c)] because:

The facility potential to emit will be more than 100 tons per year of any regulated NSR pollutant, however, it is not on the list of stationary sources specified in 40 CFR 52.21(b)(1)(i)(a);

Notwithstanding the stationary source size specified in 40 CFR 52.21(b)(1)(i), the stationary source will not emit, or have the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or

The physical change at the stationary source will not constitute a major stationary source by itself.

Since the uncontrolled PTE for CO, PM, PM₁₀, and SO₂ are greater than 250 T/yr, emission limits and operating monitoring and recordkeeping requirements were established as federally enforceable conditions in the permit to limit the facility's PTE of these pollutants to less than the 250 T/yr major source threshold. As a result of the limits established for CO, PM₁₀ and SO₂, annual emissions of all other criteria pollutants are then inherently limited to levels below the PSD threshold. Details are provided below.

Carbon Monoxide

For CO, an annual facility-wide emission limit is established to effectively limit the facility's emissions to less than the applicable major source threshold. This limit, coupled with the monitoring and recordkeeping conditions, establishes federally enforceable permit conditions that will limit total CO emissions from the facility to less than the 250 T/yr PSD threshold. Compliance with this emission limit is demonstrated by following the operating and monitoring requirements in the permit with regard to fuel types, fuel throughput, steam production, calculation of actual emissions, and performance test requirements for the Kipper boiler.

A CO performance test was conducted on the Kipper boiler on September 6, 2006, at two different steam levels while burning wood and the results were as follows.

Table 5.4. Measured Carbon Monoxide Emissions

Operating Level	Measured Emissions – Concentration Basis	Measured Emissions – Hourly Emissions
59,000 pounds steam produced per hour	427 parts per million	34.7 pounds per hour
40,000 pounds steam produced per hour	292 parts per million	18.1 pounds per hour

Based on the test data, the emission factors at the two operating levels are:

High fire (59,000 lbs steam/hr): 0.59 lbs CO per 1,000 pounds of steam produced
 Low fire (40,000 lbs steam/hr): 0.45 lbs CO per 1,000 pounds of steam produced

Using a factor of 0.60 lbs of CO per 1,000 pounds of steam produced and assuming the boiler operates at rated capacity (65,000 lbs steam per hour) for 8760 hours per year, the potential CO emissions are:

Potential CO emissions from 9/6/2006 source test: 38 lbs/hour and 167 T/yr.

BAF proposed using an emission factor of 0.927 lbs CO per 1,000 pounds of steam (or 0.464 tons CO per million pounds of steam), which is from a 1994 source test conducted on the Kipper boiler while burning wood.

Potential CO emissions from 7/11/1994 source test: 60.3 lbs/hour and 264 T/yr.

This source test was conducted before the economizer was installed, when the boiler operated at lower efficiency. If the emission factor for this test were adjusted for the change in boiler efficiency from 66.7% to the current 72.5% efficiency rate at full fire, this emission factor would decrease to:

$$0.927 \text{ lb CO/1000 lb steam} \times 0.667/0.725 = 0.84 \text{ lb CO/1000 lbs steam}$$

Note that this adjustment improves the agreement in estimated emission rates between the two sets of source tests.

Despite this change, BAF is electing to use the more conservative emission factor of 0.927 lbs CO per 1,000 pounds of steam, in the form of 0.464 tons CO per million pounds of steam to determine compliance with the CO emission limit. This provides a greater degree of conservatism that the facility will remain below the 250 ton/year threshold.

The emission factors for the dryers and the natural gas boilers listed in the equation in the permit are based on the factors used in the permit application analysis, and they were derived as follows:

EF for dryer burners = $(0.26 \text{ lb/MMBtu})(1020 \text{ Btu/scf})(\text{ton}/2000 \text{ lb}) = 0.133 \text{ ton/MMscf}$
which is based on source test results; and

EF for Boilers 1 & 2 = $(0.082 \text{ lb/MMBtu})(1020 \text{ Btu/scf})(\text{ton}/2000 \text{ lb}) = 0.042 \text{ ton/MMscf}$
which is based on AP-42 Table 1.4-1; CO = $(84 \text{ lb}/10^6 \text{ scf})(\text{scf}/1020 \text{ Btu}) = 0.082 \text{ lb/MMBtu}$

The emission factor for the dryer burners is used for all natural gas combustion units at the facility except for those in the boilerhouse (i.e., except for Boilers 1 and 2). This provides a conservative estimate for non-dryer units such as the plant heaters because the dryer burner emission factor is a much higher estimate than what is typically used for this type of source. For example, for the plant heaters, the AP-42 emission factor used in the permit application analysis is 0.082 lb/MMBtu (AP-42 Table 1.4-1), and the factor used in the permit (0.26 lb/MMBtu) is much higher. In this case, the higher factor used for the dryer burners is based on actual test data for representative units; see pages 6-7 of BAF's February 9, 2004 Emissions Unit Identification Documentation for details.

Note that even though specific factors are listed in the permit for the Kipper Boiler, the dryer burners (EF_{BB}) and Boilers 1 and 2 (EF_B), DEQ may approve alternate factors at a future date (i.e., such as when more representative data becomes available after a performance test). Further, revisions to the CO emission calculations will be needed when BAF commences coal cofiring in the Kipper Boiler. DEQ must approve in writing all such changes in the emission factors and emissions calculation formulas, and a copy should be maintained at the facility along with the permit. Even if an alternative emission factor is approved, the permittee must continue to comply with all of the other terms and conditions of the permit. Therefore, compliance with other standards, such as the limitations established to remain below the major source threshold and the NAAQS, will not be affected.

PM/PM₁₀

For PM and PM₁₀, an annual emission limit is established for the Kipper boiler to effectively limit facility-wide emissions to less than the major source threshold. This boiler is the facility's largest source of PM/PM₁₀. The uncontrolled PTE for PM₁₀ and PM exceeds 250 T/yr and the source utilizes control

systems to maintain emissions below this amount. The annual PM₁₀ emission limit, coupled with the permit's monitoring and recordkeeping conditions, establishes federally enforceable permit conditions that will limit total PM₁₀ and PM emissions from the facility to less than 250 T/yr.

An estimate of the uncontrolled PTE is given as follows. The estimated controlled PM emission rate is 16.3 lb/hr. In Section 1.6.4 of AP-42 (9/03), the PM control efficiency is given as 85% or greater for wood-fired boilers with a wet Ventri-RodTM Scrubber. On this basis the estimated uncontrolled PM emission rates are: $(16.3 \text{ lb/hr}) / (1 - 0.85) = 109 \text{ lb/hr}$ and $(109 \text{ lb/hr})(8760 \text{ hr/yr})(\text{ton}/2000 \text{ lb}) = 476 \text{ T/yr}$. Since Table 1.6-5 of AP-42 indicates the cumulative mass percent of PM₁₀ for uncontrolled emissions is 90% of the total PM emissions, the estimated uncontrolled PTE for PM₁₀ is greater than 250 T/yr as well.

Compliance with the PM₁₀ annual emission limit for the Kipper boiler is demonstrated by complying with the operating, monitoring, and recordkeeping permit conditions which limit the steam production rate and coal consumption. Although these limits were established for purposes of showing compliance with the PM₁₀ NAAQS (see the NAAQS regulatory analysis above), they will also limit the PM/PM₁₀ emissions so the annual emissions limit is not exceeded.

Annual PM and PM₁₀ emission limits are not necessary for the other sources at the facility because the sum of the allowable emissions from the Kipper boiler plus the allowable emissions from stacks 7101, 7102, 7019, 4000/228/234, 311/312 and 410/411, 613/614, 615/616, and 638 (which all have daily PM₁₀ emission rate limits that effectively limit annual emissions), plus the uncontrolled emissions from all of the other sources is 179 T/yr of PM and 149 T/yr for PM₁₀. Since this calculated PTE is less than the 250 T/yr threshold, no additional PM or PM₁₀ annual emission limits are necessary.

As noted above in the NAAQS regulatory analysis for IDAPA 58.01.01.203.02, the hourly and annual PM₁₀ emission rate limits and the corresponding operating, monitoring, recordkeeping and testing requirements (e.g., Kipper boiler steam limits, production limits for Processes A and B, etc.) will inherently limit the Rexburg facility emissions to those values used in the model to demonstrate compliance with both the 24-hour and annual PM₁₀ ambient standards.

SO₂

For SO₂, an annual emission limit of 214 T/yr is established for the Kipper boiler to effectively limit facility-wide emissions to less than the applicable major source threshold. Based on the emission information presented in the application, when the 214 T/yr boiler limit is added to the uncontrolled SO₂ PTE for all other sources (i.e., 15.6 T/yr), the major source threshold would not be exceeded ($214 + 15.6 = 230 \text{ T/yr}$). The Kipper boiler is the facility's largest source of SO₂, and without federally enforceable limitations on coal combustion the uncontrolled PTE for SO₂ would exceed 250 T/yr. For this purpose the annual SO₂ emission limit, coupled with the coal usage operating, monitoring and recordkeeping conditions were established as federally enforceable permit conditions that will limit total SO₂ emissions from the facility to less than the 250 T/yr PSD threshold.

Compliance with the 214 T/yr SO₂ emission limit is demonstrated by following the operating and monitoring requirements in the permit with regard to fuel types, coal sulfur content, and coal consumption for the Kipper boiler. Note that the fuel throughput limits are based on the quantities used in the application to demonstrate compliance with applicable requirements, as follows:

From AP-42 Table 11.3, for spreader stoker boiler firing sub-bituminous coal with up to 1% sulfur, $\text{SO}_2 = 35\text{S}$ pounds per ton of coal, where S is the weight percent of sulfur.

$$214 \text{ tons-SO}_2/\text{yr} = [(35)(1.0) \text{ lb-SO}_2/\text{ton-coal}](X)(\text{ton}/2000 \text{ lb})$$

$$X = (214 \text{ tons-SO}_2/\text{yr})(2000 \text{ lb/ton})(\text{ton-coal}/35 \text{ lb-SO}_2) = 12,228 \text{ tons-coal/yr}$$

Note that some SO₂ removal occurs in a wet scrubber. BAF did not include any removal of SO₂ in the scrubber in its permit application. Accordingly, this permit analysis neither recognizes nor considers any SO₂ removal in the scrubber.

Specific monitoring conditions for the production processes, other than the boiler, are not necessary for purposes of ensuring the facility-wide emissions of SO₂ do not exceed 250 T/yr (i.e. monitoring sulfite use). This is because the emissions from these sources were estimated at the maximum capacity of each emission unit, the variability of the actual SO₂ emissions is expected to be low, and when added to the 214 T/yr allowed for the Kipper boiler the facility-wide emissions will not exceed 250 T/yr.

NSR applicability analysis for sources constructed or modified without a PTC

In the Tier I permit compliance schedule, Condition 9.3 specified PTC application requirements “for the construction and/or modification of sources for which the permittee was required to, but did not obtain a PTC.” BAF provided detailed information to identify and address these projects in the May 2004 Tier II/PTC permit application. Those projects constructed after 1975 (when the NSR rules became effective) are listed below. As noted previously in the discussion of the applicability of IDAPA 58.01.01.201, of the 12 projects identified as potentially requiring a Permit to Construct, all of them except the following six projects qualified for a Category I exemption from Permit to Construct requirements:

- Project 1: 1976, Installation of dryer and stacks 613/614, 615/616, and 638
- Project 3: 1989, Installation of process cooler and stack 7020
- Project 4: 1993, Installation of dryers and stacks 5034 and 5037
- Project 6: 1994, Replacement of dryer associated with stack 7019
- Project 9: 1997, Installation of dryer and stack 4000
- Project 11: 1999, Replacement of dryer and installation of stacks 228 and 234
(The Erie City boilers were installed in 1960)

An analysis of the applicability of the major source rules for these six projects is given below.

First it is determined if/when the Rexburg facility became a major source under the NSR program. The NSR definitions in IDAPA 58.01.01.205.01 [40 CFR 52.21(b)] state that to be a major stationary source it must “emit, or have the potential to emit, 250 tons per year or more of a regulated NSR pollutant,” and “fugitive emissions of a stationary source shall not be included for any of the purposes of this section whether it is a major stationary source, unless the source belongs to one of the [designated] categories of stationary sources.” Since the Rexburg facility is not a designated facility, then fugitive sources, such as the woodpile, are not included in determining PTE for this applicability determination. In the July 15, 1980 Division of Environment Memorandum from Bob Stenner to Bill Dameworth regarding installation of the Kipper boiler, it is stated that “The system has been evaluated by EPA - Region X and determined that it was not of such capacity that it warranted PSD review.” In the application for this permit, it is shown that the PTE for CO is 307 tons/yr, therefore, at some point between 1980 and the present the BAF Rexburg facility became a major source. For purposes of this review, it is assumed that the facility became a major source upon startup of the Kipper Boiler in 1982; i.e., all modifications made subsequent to startup of the Kipper Boiler are potentially subject to New Source Review.

Since the Rexburg facility was a major source, the next step is to determine if any of the projects listed above was a major modification, as defined by IDAPA 58.01.01.205.01 [40 CFR 52.21(b)]. The first step of this process is to determine if any of the construction projects resulted in a “significant emissions increase.” If the increase was not significant, then the project was not a major modification. Refer to Table 5.4 which lists each project and the change in emissions associated with the project.

Table 5.5 SIGNIFICANT INCREASE ANALYSIS

Basic American Foods, Rexburg Potential Emissions Increases by Project										
Date: Project Description	PM ₁₀ ^a		CO		NO _x		SO ₂		VOC	
	T/yr	Sig ^b	T/yr	Sig ^b	T/yr	Sig ^b	T/yr	Sig ^b	T/yr	Sig ^b
1976: 1 - Installed dryer and stacks 613/614, 615/616, and 638 ^d	9.6	n/a	---	n/a	---	n/a	1.5	n/a	---	n/a
1980: PTC - Installed Kipper boiler	71.2	n/a ^e	244	n/a ^e	120	n/a ^e	214	n/a ^e	12.9	n/a ^e
1989: 3 - Installed cooler and stack 7020	1.5	No	---	No	---	No	---	No	---	No
1993: 4 - Installed dryers and stacks 5034 and 5037	5.8	No	---	No	---	No	8.2	No	---	No
1994: 6 - Replaced dryer tied to stack 7019	14.8	No	7.5	No	1.5	No	1.0	No	0.2	No
1997: 9 - Installed dryer and stack 4000	7.5	No	---	No	---	No	1.1	No	--	No
1999: 11 - Replaced dryer and installed stacks 228 and 234	6.2	No	9.2	No	1.8	No	1.1	No	0.4	No

^a Results given for PM₁₀ conservatively address PM also since emission estimates are similar and the PM₁₀ significance level is less

^b Sig = Significant Emissions Increase (Y/N): PM₁₀ = 15 T/yr; PM = 25 T/yr; CO = 100 T/yr; NO_x = 40 T/yr; SO₂ = 40 T/yr; VOC = 40 T/yr

^c PM₁₀ = (13.2/30.8)(0.5 T/yr) = 0.2 T/yr; NO_x = (13.2/30.8)(6.6 T/yr) = 2.8 T/yr; VOC = (13.2/30.8)(0.4 T/yr) = 0.2 T/yr

^d PM₁₀ = 4.8 + 3.7 + 1.1 = 9.6 T/yr

^e Information in the DEQ files indicates the project was evaluated by EPA Region 10 in 1980 and it was found that the PSD rules did not apply.

^f PM₁₀ = (8.8/30.8)(0.5 T/yr) = 0.1 T/yr; NO_x = (8.8/30.8)(6.6 T/yr) = 1.9 T/yr; VOC = (8.8/30.8)(0.4 T/yr) = 0.1 T/yr

As shown in Table 5.5, it was found that none of the facility's construction projects performed after installation of the Kipper Boiler and prior to issuance of this permit were subject to requirements under the major NSR program. In addition, following issuance of this permit the requirements of Tier I Permit Condition 9.2 will be met since the permit "will include federally enforceable operating limits which will limit the facilities potential to emit to levels which are below the PSD threshold values for all pollutants."

IDAPA 58.01.01.676-677Fuel Burning Equipment - Particulate Matter

For the Kipper boiler, IDAPA 58.01.01.676 applies since the input heat capacity is over 10 MMBtu/hr and it was installed in 1980. Under IDAPA 58.01.01.676, the following requirements apply: for wood fuel the standard is 0.080 grains per dry standard cubic feet (gr/dscf) and for coal it is 0.050 gr/dscf, both corrected to an oxygen content of 8%. When a wood-coal fuel mixture is burned, the allowable emission is determined by proportioning the gross heat input and the emission standards for each fuel, in accordance with IDAPA 58.01.01.678. In the records for the 1980 PTC, it is established that for a mixture of 61% wood and 39% coal by weight, this equates to a 50:50 mixture on a heat input basis (i.e., 1984 letter from Clint Ayer, Air Quality Bureau, to Frank Haas, American Potato Company). For this fuel mixture, the standard is 0.065 gr/dscf at 8% oxygen as given below:

$$(0.5)(0.050 \text{ gr/dscf}) + (0.5)(0.080 \text{ gr/dscf}) = 0.065 \text{ gr/dscf @ 8\% oxygen}$$

Compliance with the standard has been demonstrated when wood is fired exclusively. The performance test conducted on 4/14/82 for this boiler when firing wood, as required by the 1980 PTC, resulted in an average concentration of 0.0359 gr/dscf at 8% oxygen. For firing with a wood-coal mixture, the Tier II/PTC requires BAF to conduct periodic source tests to demonstrate compliance with the standard after firing coal is commenced.

Compliance with IDAPA 58.01.01.676-677 for natural gas-fired units is demonstrated as follows. It is reasonable to assume that compliance with the particulate matter standard is assured provided that only natural gas is combusted and the burners are maintained in good working order and operated per manufacturer recommendations. According to 40 CFR 60, Appendix A, Method 19, Table 19-1, approximately 8,710 dscf of flue gas at standard conditions (68°F, 29.92 inches of Hg) is created per million British thermal units of natural gas. This data is used in the following steps to demonstrate that particulate emissions from the combustion of natural gas will always be less than the particulate matter standard of 0.015 grains per dry standard cubic foot.

Correct the flue gas volume as follows:

- 1) Altitude correction, IDAPA 58.01.01.680. (The altitude of Rexburg is 4,870 feet).

Subtract $0.10 \times 48.7 = 4.87$ inches Hg from standard atmospheric pressure at sea level.

$$29.92 \text{ inches Hg} - 4.87 \text{ inches Hg} = 25.05 \text{ inches Hg}$$

- 2) The gas volume corrected to altitude and 3% oxygen.

Using the Ideal Gas Law and knowing that n, R, and T will be the same,

$$V_2 = \frac{P_1 V_1}{P_2}$$

where,

V_2 = the gas volume corrected for altitude,

V_1 = the known gas volume (8,710 dscf),

P_1 = the pressure of the known gas volume (29.92 inches Hg)

P_2 = the pressure of the corrected gas volume (25.05 inches Hg).

The altitude corrected volume (V_2) of the flue gas is 10,400 dscf.

For 3% oxygen:

Using a standard correction ratio as presented in 40 CFR 60, Appendix A, Method 19,

$$F_2 = F_1 \times \frac{20.9}{20.9 - 3.0}$$

where,

F_2 = the gas volume corrected to 3% oxygen,

F_1 = the altitude corrected flue gas volume (10,400 dscf) calculated as V_2 above.

The oxygen and altitude corrected volume (F_2) of the flue gas is 12,150 dscf per one million British thermal units of natural gas.

- 3) Determine the volume of flue gas created by the combustion of one million cubic feet of natural gas as follows:

$$1,050 \text{ Btu/feet}^3 \times 12,150 \text{ dscf/10}^6 \text{ Btu} = 12.8 \times 10^6 \text{ dscf}$$

- 4) Determine the amount of particulate matter (PM) created by the combustion of one million cubic feet of natural gas: from Table 1.4-2 of AP-42 (7/98 version) - 7.6 lb/MMscf

- 5) Determine the grain loading per cubic foot of flue gas as follows:

$$7.6 \text{ lb PM} \times 7,000 \text{ gr/lb} \div 12.8 \times 10^6 \text{ dscf} = 0.0042 \text{ gr/dscf} < 0.015 \text{ gr/dscf}$$

The emission estimate provided above for natural gas combustion results in an approximated grain loading well below the standard of 0.015 gr/dscf. Therefore, as long as the emissions unit combusts natural gas and the burners are maintained in good working order and operated per manufacturer recommendations, compliance with the grain-loading standard is reasonably assured.

IDAPA 58.01.01.700-703Particulate Matter – Process Weight Limitations

All processes at the facility emit PM at levels below the allowable emission rates under this rule or have emission limits that demonstrate compliance with the rule.

40 CFR 60 Subpart Dc New Source Performance Standards (NSPS) for Small Industrial, Commercial and Institutional Steam Generating Units

Under 40 CFR 60.40b(a), the affected facilities to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. All three of the Rexburg facility boilers meet the size criteria, but not the date of construction applicability criteria based on the information included in the permit applications and in the file for this facility. Therefore, Subpart Dc does not apply to any of the boilers at this facility

40 CFR 61 and 63 National Emission Standards for Hazardous Air Pollutants & MACT

There are no requirements under 40 CFR Parts 61 and 63 that apply to the BAF Rexburg facility.

40 CFR 64 Compliance Assurance Monitoring

The Kipper boiler is required to follow a CAM plan because the boiler meets the applicability criteria in 40 CFR 64.2(a) as follows:

(1) The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under paragraph (b)(1) of this section;

The Kipper boiler is subject to the grainloading standard for fuel burning equipment found in IDAPA 58.01.01.675-681. The Kipper boiler was installed after October 1, 1979, so the applicable standards for new sources are applicable when burning wood or a wood/coal mixture. The boiler is not exempt from CAM requirements under any of the exemption criteria in 40 CFR 64.2(b).

(2) The unit uses a control device to achieve compliance with any such emission limitation or standard; and

The Kipper boiler uses a multiclone and wet scrubber to meet the particulate matter standard.

(3) The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, “potential pre-control device emissions” shall have the same meaning as “potential to emit,” as defined in §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.

For particulate matter, 100 tons per year is the emission level for a source to be classified as a major source under 40 CFR Part 70. Pre-control emissions of particulate matter are estimated by BAF to be 220 tons per year.

BAF submitted a CAM Plan on October 3, 2006 as an addendum to the Tier I permit application. Amendments to the CAM Plan were received on December 7, 2007 and January 25, 2008. The CAM Plan requirements were incorporated into Tier I Operating Permit No. T1-060513 and are included in this Tier II permit as the compliance demonstration for the Kipper boiler.

5.4 Fee Review

A Tier II operating permit processing fee of \$10,000 is required in accordance with IDAPA 58.01.01.407 because the permitted emissions in the Tier II permit is 100 tons or more per year as indicated in Table 5.6.

The BAF Rexburg facility is a major facility as defined in IDAPA 58.01.01.008.10. Therefore, Tier I registration fees are applicable in accordance with IDAPA 58.01.01.387. As of February 5, 2008, the current balance due for Tier I fees is \$0.00.

Table 5.6 Tier II Processing Fee Summary

Emissions Inventory	
Pollutant	Permitted Emissions
NO _x	170
SO ₂	230
CO	249
PM ₁₀	175
VOC	16
TAPS/HAPS	8
Total:	848
Tier II Fee	\$10,000.00
Fees paid to date	\$0.00
Fee Due	\$10,000.00

6. PERMIT CONDITIONS

This section summarizes and explains the reasoning behind the new permit conditions in the Tier II/PTC.

Facility-wide Requirements: Permit Section 2

Standard facility-wide permit conditions which apply to this facility exist in Tier I Operating Permit No. T1-060513. They were not included in this Tier II permit because they are already enforceable conditions in the Tier I permit, and not including them avoids the possibility of differences existing between the facility-wide conditions in the Tier I permit and Tier II permit.

Kipper Boiler PM₁₀ Emissions Limit: Permit Section 3

Permit Condition 3.2 establishes a pound per hour emission limit for PM₁₀ from the Kipper boiler for purposes of maintaining compliance with the PM₁₀ NAAQS. This limit is established since the modeling results indicate the Kipper boiler is one of the main contributors to concentrations of PM₁₀ to receptors near the facility. The pound per hour limit is based on the value used in the application and demonstrates compliance with both the 24-hr and annual PM₁₀ NAAQS. Refer to the regulatory analysis section under IDAPA 58.01.01.203 for details.

Permit Condition 3.2 also establishes an annual emission limit for PM₁₀ from the Kipper boiler to limit facility-wide emissions to less than the applicable major source threshold. This annual limit is necessary since the uncontrolled PTE for PM₁₀ and PM exceeds 250 T/yr and the source utilizes control systems to

maintain emissions below this amount. This limit, coupled with the corresponding operating, monitoring and recordkeeping conditions for fuel usage and control equipment monitoring in the compliance assurance monitoring plan (conditions 3.13-3.15) establishes federally enforceable permit conditions that will limit total PM₁₀ and PM emissions from the facility to less than 250 T/yr.

Compliance with the PM₁₀ pound per hour emission limit is demonstrated through source testing (the CAM plan testing was conducted September 6, 2006, and was less than 75% of emissions limit, so additional testing is not required for five years) and by following the operating and monitoring requirements in the permit with regard to the emissions control systems, steam production, and tuning the Kipper boiler. Refer to the regulatory analysis section under IDAPA 58.01.01.203 and 205 for details. Compliance with the annual limit is assured as long as compliance with the PM₁₀ pound per hour limit, and the corresponding operating, monitoring, and recordkeeping requirements are maintained.

Kipper Boiler SO₂ Emissions Limit: Permit Section 3

Permit Condition 3.3 establishes a 214 T/yr annual emission limit for SO₂ from the Kipper boiler to limit facility-wide emissions to less than the applicable major source threshold. This limit, coupled with the corresponding coal sulfur content limits and coal usage monitoring and recordkeeping conditions, establishes federally enforceable permit conditions that will limit the facility's SO₂ PTE to less than the 250 T/yr PSD threshold.

Compliance with this emission limit is demonstrated by following the operating and monitoring requirements in the permit with regard to fuel types, fuel sulfur content, and coal usage for the Kipper boiler. Refer to the regulatory analysis for SO₂ under IDAPA 58.01.01.205 for more information.

As noted previously, the determination of potential SO₂ emissions from the Kipper Boiler does not consider additional SO₂ removal that would occur in the Ventri-Rod® scrubber in conjunction with particulate removal.

Kipper Boiler Fuel Burning Equipment PM Standard: Permit Section 3

Permit Condition 3.5 includes the PM emissions standard for the Kipper boiler with respect fuel burning equipment, IDAPA 58.01.01.675-676.

Compliance with this emission limit is demonstrated through source testing and by following the same operating and monitoring requirements in the permit established to control PM₁₀. This includes the permit conditions regarding the emissions control systems, fuel throughput, and tuning for the Kipper boiler.

If a combination of coal and wood fuel is burned, the proportional heat input shall be determined in accordance with Permit Condition 3.11. Permit Condition 3.11 requires BAF to monitor and record the amount of steam produced by the boiler and the weight of coal fed to the boiler. The amount of heat input to the boiler from coal is determined by multiplying the weight of coal by the 19 MMBtu/ton, which was derived from the average heat content of coal (9500 Btu/lb). See NAAQS compliance discussion above for additional explanation of average coal heat content.

The amount of heat input is determined by monitoring the total steam production and calculating the amount of heat input required for the boiler to produce that amount of steam. With the economizer installed on the Kipper Boiler, boiler efficiency is estimated to be 72.5% at full fire. The total heat input calculation is as follows:

$$Q = 65,000 \text{ lb/hr steam output} \times 1,000 \text{ Btu/lb steam} / 0.725 \text{ efficiency} = 90,000,000 \text{ Btu/hr heat input}$$

Where:

1,000 Btu/lb steam = average steam heat content

0.725 efficiency = boiler efficiency

If both coal and wood are burned, the proportional heat content of wood is determined by subtracting the heat content of coal from the total heat input. For example, if the boiler used 1.5 tons of coal during a one-hour test run while the boiler was producing 50,000 pounds per hour of steam:

Coal heat input:

$$1.5 \text{ tons coal/hr} * 19 \text{ MMBtu/ton} = 28.5 \text{ MMBtu/hr}$$

Total heat input:

$$Q = 50,000 \text{ lb/hr steam output} * 1,000 \text{ Btu/lb steam} / 0.725 \text{ efficiency} = 69 \text{ MMBtu/hr heat input}$$

Wood heat input:

$$69 \text{ MMBtu/hr total} - 28.5 \text{ MMBtu/hr coal} = 40.5 \text{ MMBtu/hr from wood}$$

Boilers 1 and 2 Fuel Burning Equipment PM Standard: Permit Section 4

Permit Condition 4.2 includes the PM emissions standard for fuel burning equipment, IDAPA 58.01.01.675-676.

Compliance with this emission limit is demonstrated by burning only natural gas, monitoring the natural gas usage, and performing boiler inspections and maintenance.

Processes A and B PM₁₀ Emissions Limits: Permit Sections 5 and 6

Pound per hour PM₁₀ emission limits for certain cooler/dryers and material transfer systems are established for purposes of maintaining compliance with the NAAQS. The limits are established since the modeling results indicate these particular production units are the most likely to contribute to concentrations of PM₁₀ for receptors near the facility. For flexibility purposes, a single emission limit was given for each group of similar equipment (e.g., 311, 312, and 410/412); this grouping was acceptable since the model indicates all stacks within each group have similar impacts on the receptors. The pound per hour basis was used for the limit since modeling indicates compliance with the NAAQS 24-hour averaging time for PM₁₀ will result in compliance with the annual NAAQS as well. Refer to the regulatory analysis section under IDAPA 58.01.01.203 for details on how the emission rate limits were derived.

Compliance with the emission limits is demonstrated through PM₁₀ performance testing and using the emission factors obtained from the most recent test to show that the actual emission rate of each unit is less than or equal to the emission rate limit, based on the maximum rated throughput of the unit:

$$\text{Actual Emissions} = (\text{Emission Factor from the Performance Test}) * (\text{Maximum Rated Throughput}).$$

For purposes of maintaining compliance with the PM₁₀ NAAQS, operating requirements were established to limit the daily production output, in tons per day, from Process A and Process B. A daily basis is used for the production limit to correspond to the 24-hour NAAQS. To demonstrate that the facility production rate does not exceed the rates for which NAAQS compliance was demonstrated, as described in the application, production limits of 61 tons per day for Process A and 304 tons per day for Process B were established. These rates are based on the process operating rates used in BAF's air quality impact analysis and the maximum finished product rates provided in the application.

Compliance is demonstrated through permit requirements to monitor and record the daily production output in pounds per day from Process A and Process B.

Dryer burner fuels: Permit Sections 5 and 6

A requirement to combust only natural gas in each dryer was added to demonstrate that NAAQS requirements are met as demonstrated in the permit application. A specific compliance demonstration is not necessary for this permit condition; compliance may be assessed at the time of each DEQ inspection and as part of the Title V annual compliance certifications.

Dryer Performance Tests: Permit Sections 5 and 6

Because the modeled concentration of PM₁₀ is close to the NAAQS standards, additional performance test requirements were added to the permit to demonstrate NAAQS compliance by showing that representative actual emissions from the facility's sources will not exceed the emission rates evaluated in the model. Performance tests are required for each of the following: Cooler/Dryer 7101 or 7102; Cooler/Dryers 4000, 228, 234 or 311, 312, 410/411 or 613/614, 615/616, 638; and Cooler/Dryer 7019. Reports for previous tests conducted for these sources may be submitted to DEQ to comply with the test requirements; and these tests will be subjected to the same review and approval process as a newly conducted test. BAF has previously conducted particulate matter testing on similar units at the Blackfoot facility, but much of the testing was done using Oregon Method 8, and it's not clear from the application exactly how similar the Rexburg units are to the Blackfoot units because BAF does not want to provide too much detail for confidentiality purposes.

Plant Space Heaters: Permit Section 7

The BAF Rexburg Facility has numerous space heaters ranging in size from less than 100,000 Btu/hr to 8.8 MMBtu/hr, with a total combustion capacity of 30.8 MMBtu/hr. There are no emission limits specifically applicable to the plant space heaters. Emissions from plant space heaters are regulated as part of the facility Carbon Monoxide Emission Limit in Permit Condition 8.1.

Facility-wide CO Emissions Limit: Permit Section 8

Permit Condition 8.1 establishes an annual facility-wide emission limit for CO to limit the facility's emissions to less than the applicable major source threshold. This limit, coupled with the corresponding monitoring and recordkeeping conditions establishes federally enforceable permit conditions that will limit the facility's CO PTE to less than the 250 T/yr PSD threshold. For purposes of this and other annual limits in the permit, "annual" is considered to be any rolling 12-month period.

Compliance with this emission limit is demonstrated by following the operating and monitoring requirements in the permit with regard to fuel throughput, boiler tuning, steam production, and performance test requirements for the Kipper boiler, in addition to the natural gas usage monitoring for boilers 1 and 2 and plant space heaters. Refer to the regulatory analysis for CO under IDAPA 58.01.01.205 for more information.

7. PERMIT REVIEW

7.1 *Regional Review of Draft Permit*

The draft permit was provided to the Idaho Falls Regional Office for review on February 8, 2008. Maria Miles responded on February 13, 2008, and said that she had no comments.

7.2 *Facility Review of Draft Permit*

The draft permit is being provided to BAF for review and comment prior to issuing the permit for public comment.

7.3 *Public Comment*

A 30-day public comment period for the proposed permit will be scheduled for the permit in accordance with IDAPA 58.01.01.404.01.c and 58.01.01.209. A notice will be published in the local newspaper, and copies of the proposed action will be available for public review in accordance with these rules.

KH/ZK

T2-030515

Appendix A

Basic American Foods, Rexburg

T2-030515

Process Schematics

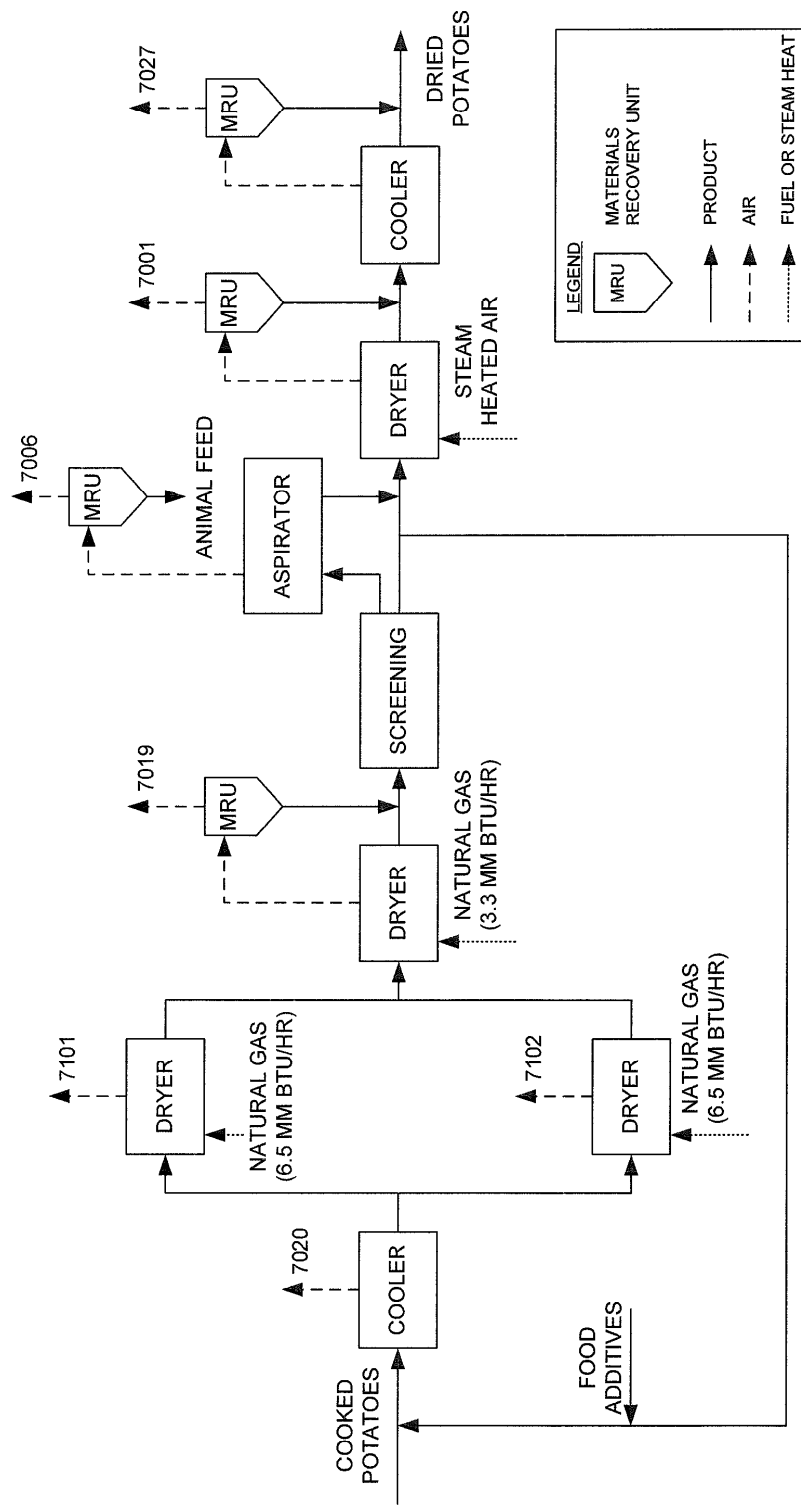


Figure 3-2
Process Schematic - Process A
 APPLICATION FOR RENEWAL OF TIER I AIR
 OPERATING PERMIT
 REXBURG FACILITY OF BASIC AMERICAN FOODS
 Coal Creek Environmental Associates, LLC
 Project 060101.10
 June 2006

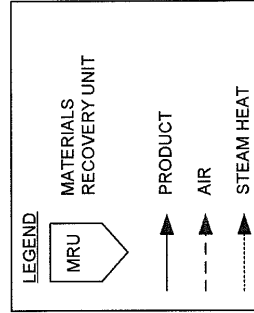
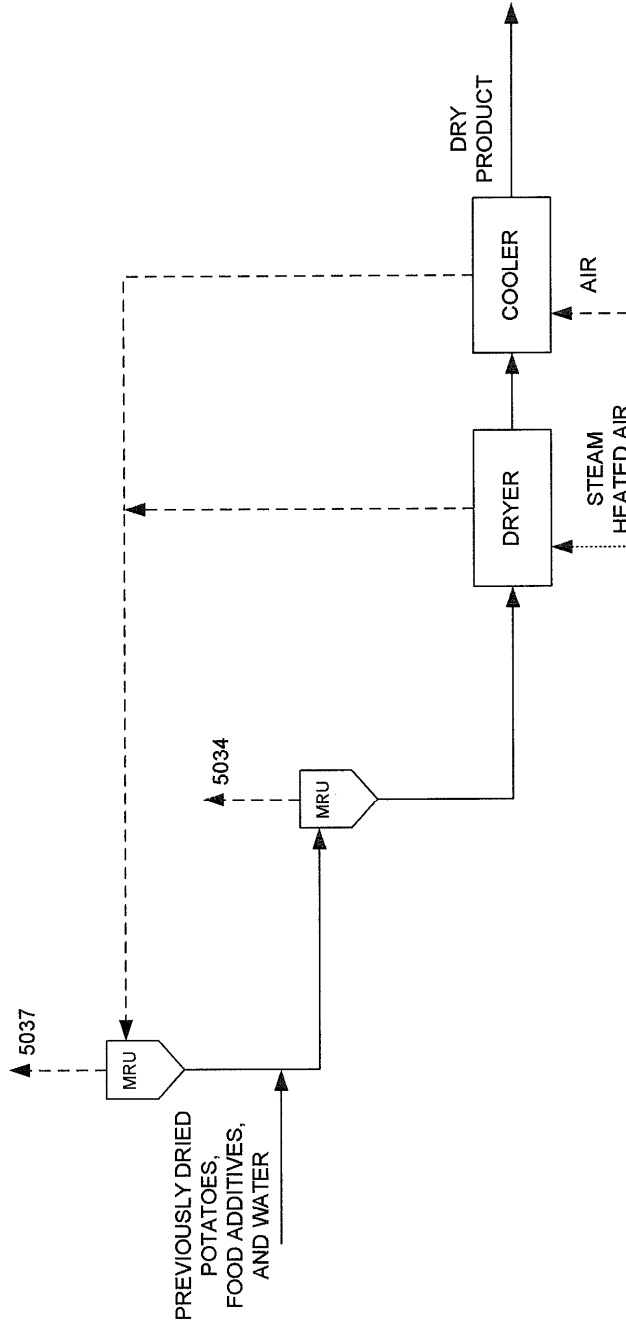


Figure 3-3a
Process Schematic - Process B
Part 1

APPLICATION FOR RENEWAL OF TIER I AIR
 OPERATING PERMIT
 REXBURG FACILITY OF BASIC AMERICAN FOODS

Coal Creek Environmental Associates, LLC
 Project 060101.10
 June 2006

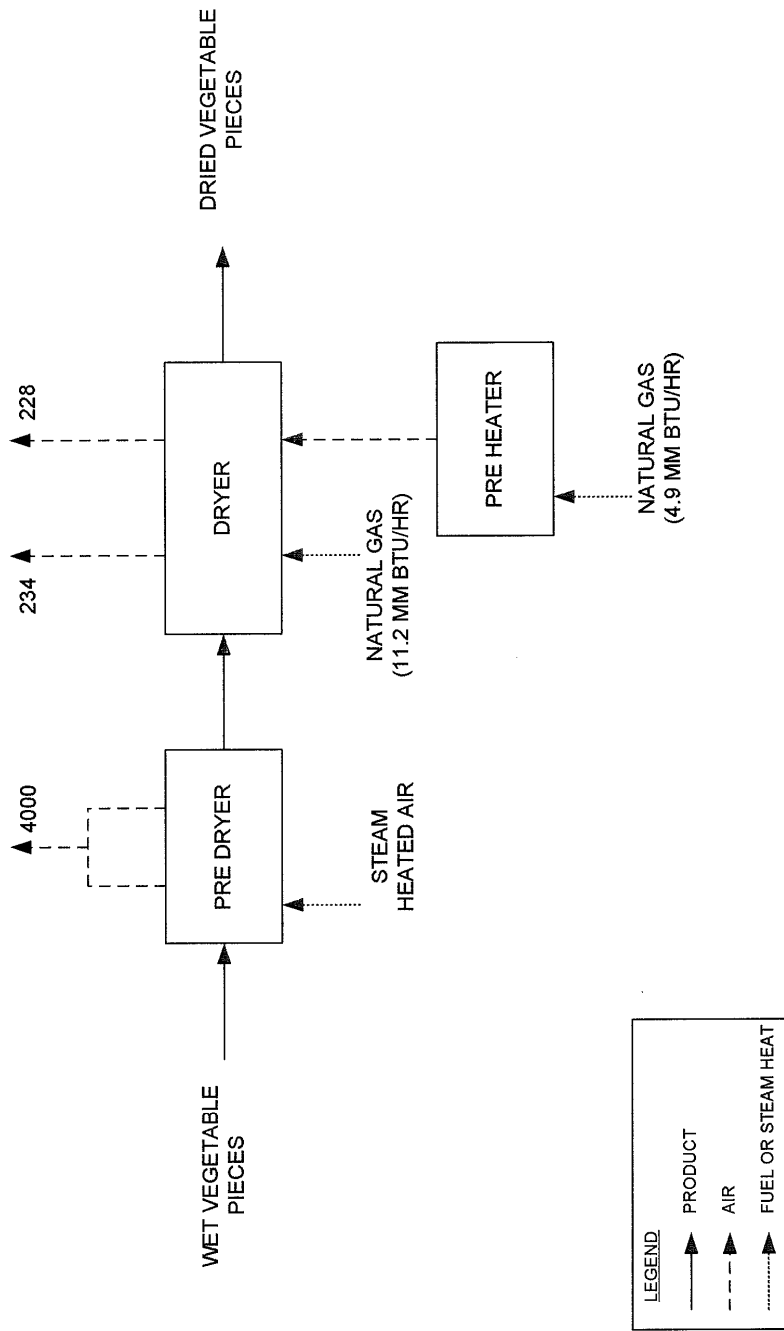


Figure 3-3b
Process Schematic - Process B
Part 2

APPLICATION FOR RENEWAL OF TIER I AIR
 OPERATING PERMIT
 REXBURG FACILITY OF BASIC AMERICAN FOODS

Coal Creek Environmental Associates, LLC
 Project 060101.10
 June 2006

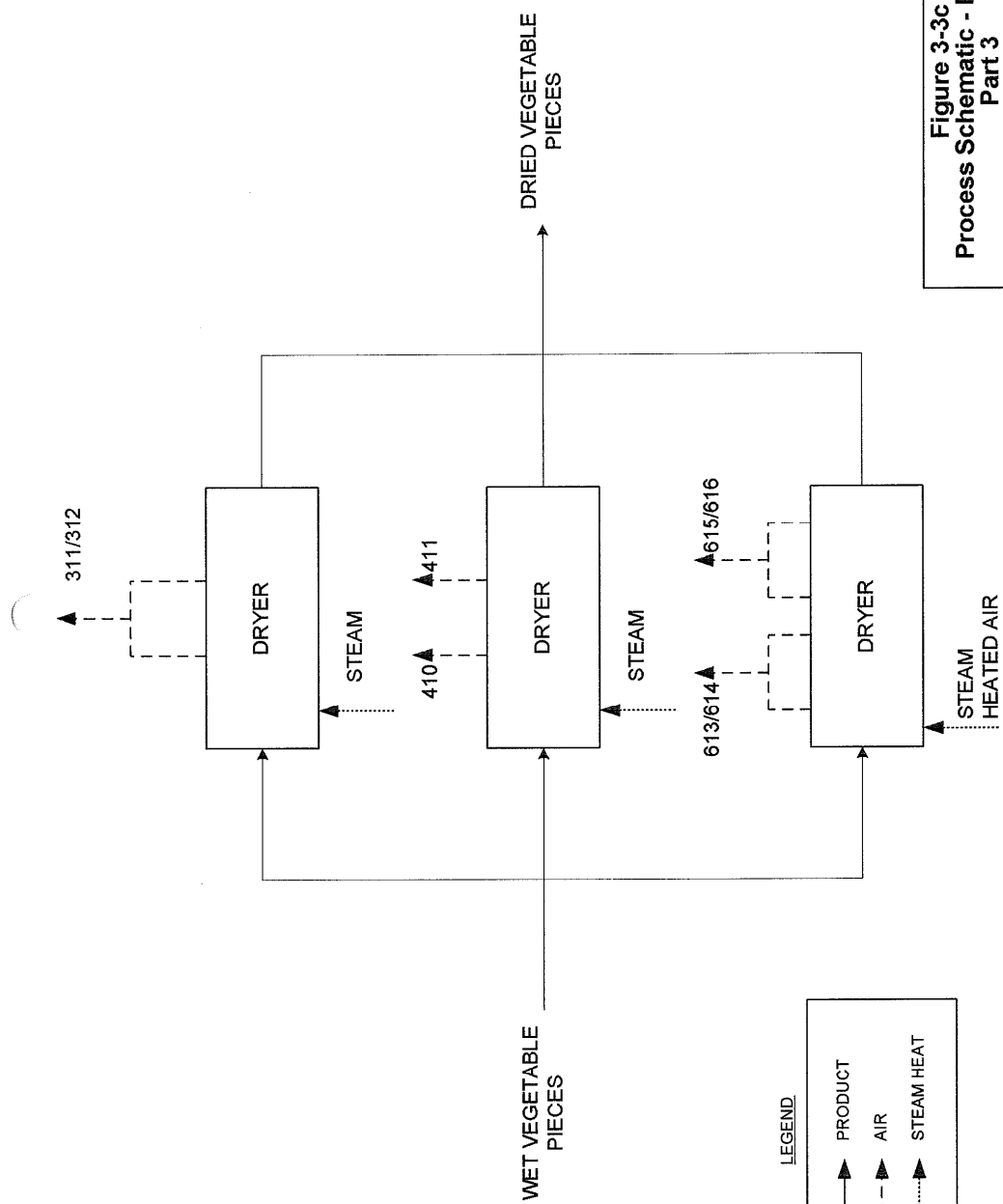


Figure 3-3c
Process Schematic - Process B
Part 3
 APPLICATION FOR RENEWAL OF TIER I AIR
 OPERATING PERMIT
 REXBURG FACILITY OF BASIC AMERICAN FOODS
 Coal Creek Environmental Associates, LLC
 Project 060101.10
 June 2006



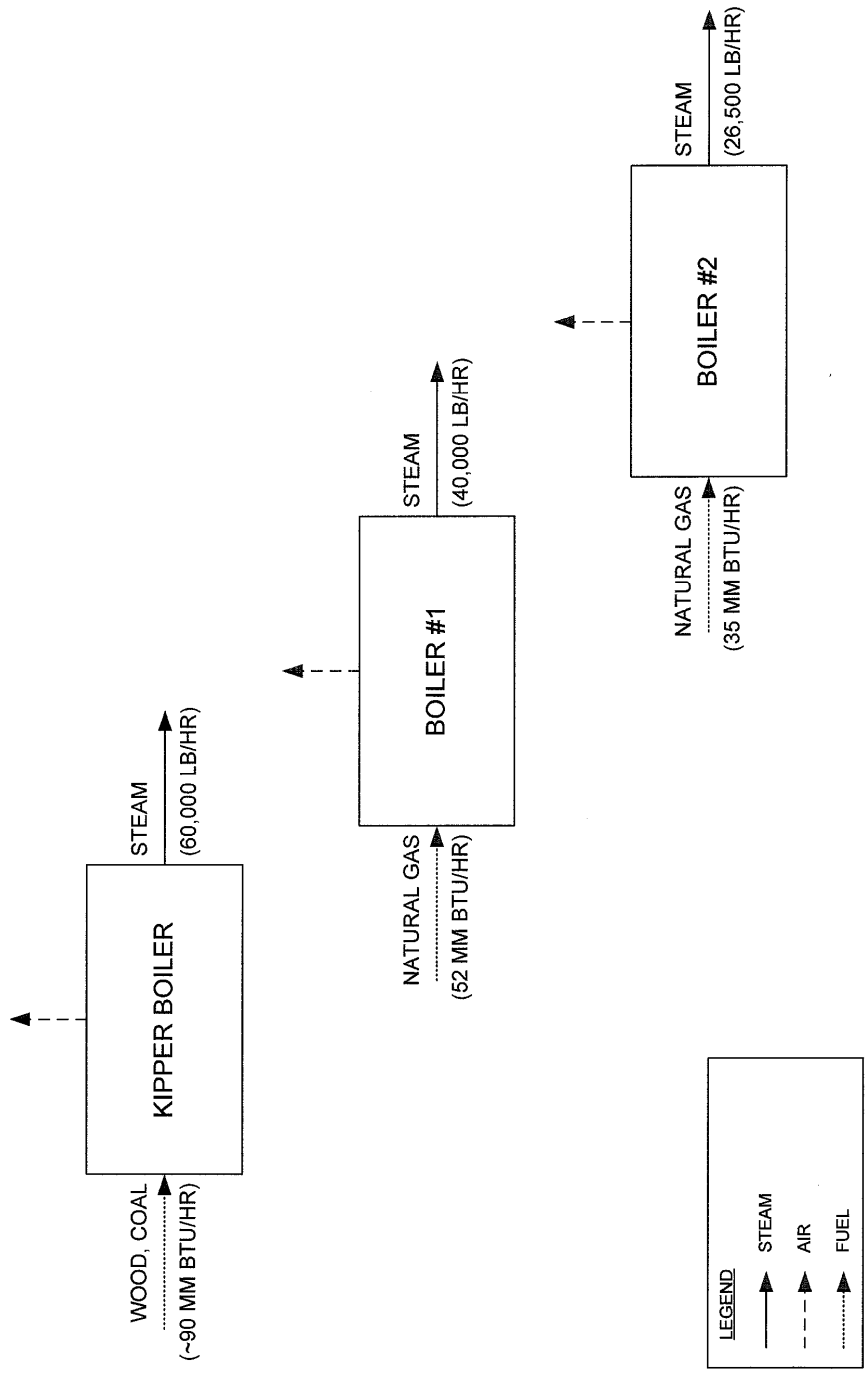


Figure 3-1
Process Schematic - Boilers
 APPLICATION FOR RENEWAL OF TIER I AIR
 OPERATING PERMIT
 REXBURG FACILITY OF BASIC AMERICAN FOODS
 Coal Creek Environmental Associates, LLC
 Project 060101.10
 June 2006

Appendix B

Basic American Foods, Rexburg

T2-030515

Modeling Memos
July 24, 2004 and May 2, 2007

MEMORANDUM

DATE: July 21, 2004

TO: Ken Hanna, Air Quality Permitting Analyst, Air Quality Division

FROM: Mary Anderson, Modeling Coordinator, Air Quality Division

PROJECT NUMBER: T2-030515

SUBJECT: Modeling Review for the Tier II Operating Permit Application for the Basic American Foods, Rexburg, Idaho

1.0 Summary

The Department of Environmental Quality (DEQ) received a Tier II operating permit application from Basic American Foods for their facility in Rexburg, ID. Atmospheric dispersion modeling of facility-wide emissions was submitted in support of the Tier II permit application to demonstrate that the stationary source would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02). This modeling analysis included 31 sources and addressed the following criteria pollutants: PM₁₀, SO₂, NO₂, CO, and Pb. This analysis also addressed 2 toxic air pollutants associated with a modification.

Table 1 presents the key assumptions used in the modeling analysis submitted by the applicant.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSIS SUBMITTED BY THE APPLICANT	
Assumption	Explanation
Assumed that the heaters only operate a maximum of 4360 hours per year for determining compliance with the annual averages, and 2190 hours per quarter for determining compliance with the quarterly average for lead.	This assumption must be federally enforceable for the demonstration of compliance to be valid and support the permitting action. The sensitivity analysis in Section 4.0 shows that even when the heaters are assumed to operate 100% of the time, compliance with the ambient air quality standards is still demonstrated.
The following stacks were assumed to be changed from current configurations in the modeling, in order for the facility to demonstrate compliance with the PM ₁₀ NAAQS: Stacks 228, 234, 311, 312, 410/411, 613/614, 615/616 were modeled as vertical uncovered; Stacks 7019 and 4000 were modeled with an increase in stack height of 10 feet.	For the demonstration of compliance with the ambient air quality standards the following stack configurations must be federally enforceable: Stacks 228, 234, 311, 312, 410/411, 613/614, 615/616 must discharge vertically without impedance; Stack 7019 must have a minimum stack height of 76.4ft (23.3 m); stack 4000 must have a minimum stack height of 61.1 ft (18.6 m).

During the review DEQ identified that the facility assumed that the heaters would only operate 50% of the time. This assumption was applied to the compliance demonstrations for the following pollutants and averaging periods: PM₁₀, NO_x, SO₂, and Cadmium annual average; lead quarterly average, and nitrous oxide 24 hour average. For this assumption to be accurate this would have to be a federally enforceable limit. The facility did not anticipate operational limits on these sources. DEQ performed a sensitivity analysis on this assumption to determine whether a permit limit was needed to demonstrate compliance with the NAAQS. This sensitivity analysis included rerunning the model assuming the heaters operated 100% of the time for all pollutants and all averaging periods. The sensitivity analysis showed that these discrepancies did not make a difference in the design concentration and the demonstration of compliance with applicable standards. The sensitivity analysis results are discussed in Section 4.0.

Based on the results of the sensitivity analyses, DEQ has determined that the submitted modeling analysis, with the stated changes to stack configurations, demonstrated compliance with all applicable standards.

2.0 Background Information

2.1 Applicable Air Quality Impact Limits

This facility is located in Madison County designated as an attainment or unclassifiable area for sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), lead (Pb), ozone (O₃), and particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀). The applicable regulatory limits for this application are presented in Table 2.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	Averaging Period	Significant Contribution Levels^a (µg/m³)^b	Regulatory Limit (µg/m³)^c	Modeled Value Used^d
PM ₁₀ ^e	Annual	1	50 ^f	Maximum 1 st highest
	24-hour	5	150 ^g	Highest 6 th highest ^h
CO	8-hour	500	10,000 ^h	Highest 2 nd highest
	1-hour	2000	40,000 ^h	Highest 2 nd highest
SO ₂	Annual	1	80 ⁱ	Maximum 1 st highest
	24-hour	5	365 ^h	Highest 2 nd highest
	3-hour	25	1,300 ^h	Highest 2 nd highest
NO ₂	Annual	1	100 ^f	Maximum 1 st highest
Lead	Quarterly	N/A	1.5 ^j	Maximum 1 st highest
Nitrous Oxide	24-hour	N/A	4.5E+03 ⁱ	Maximum 1 st highest
Cadmium	Annual	N/A	5.6E-04 ⁱ	Maximum 1 st highest
a. IDAPA 58.01.01.006.93 b. Micrograms per cubic meter c. IDAPA 58.01.01.577 for criteria pollutants, IDAPA 58.01.01.585 for non-carcinogenic toxic air pollutants IDAPA 58.01.01.586 for carcinogenic toxic air pollutants. d. The maximum 1 st highest modeled value is always used for significant impact analysis and for all toxic air pollutants. Concentration at any modeled receptor. e. Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers f. Never expected to be exceeded in any calendar year. g. Never expected to be exceeded more than once in any calendar year. h. When using 5 years of meteorological data. The highest 6 th high for a 5 year period. i. Not to be exceeded more than once per year. j. Not to be exceeded in any calendar year. k. Not to be exceeded in any quarter in any calendar year.				

2.2 Background Concentrations

The appropriate background concentrations for this modeling analysis are presented in Table 3.

Table 3. BACKGROUND CONCENTRATIONS.		
Pollutant	Averaging Period	Background concentrations ($\mu\text{g}/\text{m}^3$)^a
PM10	24-hour	73
	Annual	26
CO	1-hour	3,600
	8-hour	2,300
SO ₂	3-hour	34
	24-hour	26
	Annual	8
NO ₂	Annual	17
Lead	quarterly	0.03
a. Micrograms per cubic meter.		

3.0 Assessment of Submitted, Certified Modeling Analysis

This section documents the assessment of the application materials as submitted and certified by the applicant.

3.1 Modeling Methodology

Coal Creek Environmental Associates, LLC conducted the modeling analysis. Table 4 presents the modeling assumptions and parameters used by the applicant. Table 4 also includes DEQ's review and determination of those assumptions and parameters.

Table 4. MODELING PARAMETERS.		
Parameter	What Facility Submitted	DEQ's Review/Determination
Modeling protocol	A modeling protocol was submitted for prior approval	<i>The protocol was followed</i>
Model Selection	ISC-prime	This is appropriate and correct version was used.
Meteorological Data	Pocatello NWS surface 1987 – 1991 Boise NWS upper air 1987 - 1991	This is the most appropriate of currently available meteorological data.
Model Options	Regulatory defaults used	Appropriate
Land Use	Rural land use	Appropriate
Complex Terrain	Complex terrain is present and included in the model	Appropriate
Building Downwash	Downwash was included	Appropriate
Ambient Air Boundary	The entire facility is fenced. The fence-line is treated as the ambient air boundary	Appropriate
Receptor Network	25 meter along ambient air boundary, extending to a distance of 100 meters 100 meter out to 1000 meters	This is sufficient to adequately address the maximum design concentration
Facility Layout	N/A	The facility layout used in the model was verified by using the scaled plot plan submitted by the applicant

3.2 Emission Rates

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application. If modeled emissions rates were equal to or slightly greater than the facility's emissions calculated in the permit application or the permitted allowable rate, then it was determined to be appropriate.

Table 5 provides criteria pollutant and TAPs emission rates used in the submitted modeling files.

Table 5. EMISSION RATES FOR CRITERIA POLLUTANTS AND TOXIC AIR POLLUTANTS (lb/hr)

Stack Identification	Stack Modeled Name	PM ₁₀	CO	NO _x	SO ₂	Lead	Cadmium	Nitrous Oxide
KIPPER	KIPPER	16.254	55.620	27.380	48.895	4.32E-03	3.69E-04	1.17E+00
BOILER1	BOILER1	0.387	4.282	5.098	0.122	2.55E-05	5.61E-05	1.12E-01
BOILER2	BOILER2	0.261	2.882	3.431	0.082	1.72E-05	3.78E-05	7.55E-02
7020	7020	0.415	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
7101	7101	2.162	1.690	0.332	0.117	3.19E-06	7.01E-06	1.40E-02
7102	7102	2.162	1.690	0.332	0.117	3.19E-06	7.01E-06	1.40E-02
7019	7019	3.386	1.716	0.337	0.220	3.24E-06	7.12E-06	1.42E-02
7001	7001	0.235	0.000	0.000	0.025	0.00E+00	0.00E+00	0.00E+00
7027	7027	0.041	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
7006	7006	0.122	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
5034	5034	0.017	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
5037	5037	1.292	0.000	0.000	1.870	0.00E+00	0.00E+00	0.00E+00
4000	4000	1.720	0.000	0.000	0.260	0.00E+00	0.00E+00	0.00E+00
228	228	1.096	1.256	0.246	0.191	4.74E-06	1.04E-05	2.08E-02
234	234	0.312	0.837	0.164	0.063	3.16E-06	6.95E-06	1.39E-02
311	311	0.293	0.000	0.000	0.045	0.00E+00	0.00E+00	0.00E+00
312	312	0.293	0.000	0.000	0.045	0.00E+00	0.00E+00	0.00E+00
410/411	410/411	0.587	0.000	0.000	0.088	0.00E+00	0.00E+00	0.00E+00
613/614	613/614	1.095	0.000	0.000	0.168	0.00E+00	0.00E+00	0.00E+00
615/616	615/616	0.854	0.000	0.000	0.129	0.00E+00	0.00E+00	0.00E+00
638	638	0.241	0.000	0.000	0.036	0.00E+00	0.00E+00	0.00E+00
707	725	0.000	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
725	707	0.049	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
8	8	0.049	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
5001	5000	0.243	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
5000	5001	0.049	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
432	432	0.049	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
322	322	0.000	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
572	572	0.188	0.000	0.000	0.000	0.00E+00	0.00E+00	0.00E+00
HEATERS ^a	HEATERS	0.229 (24-hour) 0.115 (annual)	2.536	1.510	0.072 (short term) 0.036 (annual)	7.55E-06	1.66E-05	3.32E-02

a. Based on the assumption of 24 hours per day, 2190 hours per quarter (50% time), and 4360 hours per year (50% time). See Section 4.0 for a discussion of a sensitivity analysis on this assumption.

3.3 Emission Release Parameters

The emission release parameters used in the modeling analysis submitted by the applicant are presented in Table 6.

Table 6. EMISSION RELEASE PARAMETERS

Stack Identification	Stack Modeled Name	Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Exit Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)
KIPPER	KIPPER	437173.6	4854139	1482.5	20.1168	327.04	10.607	1.2192
BOILER1	BOILER1	437167.5	4854148	1482.7	10.9728	533.15	14.353	0.9144
BOILER2	BOILER2	437162.3	4854148	1482.6	10.9728	533.15	9.453	0.9144
7020	7020	437116.5	4854103	1482.2	21.9456	309.26	0.001	0.5081
7101	7101	437112.4	4854121	1482.2	21.5646	352.04	14.214	1.0796
7102	7102	437107.9	4854128	1482.3	21.5128	340.37	13.632	1.0796
7019	7019	437115.3	4854101	1482.2	23.2928	330.37	18.166	0.7873
7001	7001	437106.5	4854101	1482.2	20.065	305.37	10.62	0.4063
7027	7027	437106.7	4854103	1482.2	20.827	302.59	10.839	0.3557
7006	7006	437106	4854110	1482.2	19.9644	305.37	15.24	0.2731
5034	5037	437103.5	4854112	1482.2	20.827	327.59	13.508	0.67208
5037	5034	437102	4854114	1482.2	20.7264	338.71	13.689	0.21854
4000	4000	437137.9	4854113	1482.2	18.6172	333.15	15.24	0.85131
228	228	437137.4	4854091	1482.2	11.5824	349.82	10.16	1.28229
234	234	437137.9	4854079	1481.9	10.5766	344.26	10.16	1.17074
311	311	437123.4	4854089	1481.9	9.5006	324.26	15.24	0.89642
312	312	437125.1	4854089	1481.9	9.5006	318.71	15.24	0.89642
410/411	410/411	437129.5	4854089	1481.9	9.2964	327.59	7.031	1.09972
613/614	613/614	437144.2	4854091	1482.2	8.635	333.15	16.828	0.62789
615/616	615/616	437142.5	4854083	1482	7.9492	362.04	13.766	0.65867
638	638	437142.9	4854073	1481.9	8.8148	345.37	8.826	0.4191
707	725	437155.9	4854037	1481.6	4.2154	305.37	0.001 ^a	0.000914 ^a
725	707	437155.9	4854043	1481.7	5.1054	305.37	0.001 ^a	0.000914 ^a
8	8	437098.3	4854087	1481.9	6.605	300.37	0.001 ^a	0.000914 ^a
5001	5000	437104.7	4854101	1482.2	20.7264	297.59	7.619	0.21854
5000	5001	437098.3	4854065	1481.8	8.0772	299.82	0.001 ^a	0.000914 ^a
432	432	437098.3	4854072	1481.9	7.0409	299.82	0.001 ^a	0.000914 ^a
322	322	437092.3	4854079	1481.9	2.9962	355.37	0.001 ^a	0.000914 ^a
572	572	437170.5	4854165	1482.9	4.7244	305.37	15.24	0.1652
HEATERS	HEATERS	437121	4854098	1482.2	9.144	294.26	0.001 ^a	0.000914 ^a

a. Horizontal and capped sources modeled based on Idaho modeling guidance.

3.4 Results

These results are based on the modeling files submitted by the applicant and reviewed by DEQ.

3.4.1 Full Impact Analysis Results

Table 7. FULL IMPACT ANALYSIS RESULTS						
Pollutant	Averaging Period	Facility Ambient Impact ($\mu\text{g}/\text{m}^3$)	Background Concentration ($\mu\text{g}/\text{m}^3$)	Total Ambient Concentration ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Percent of NAAQS
PM ₁₀	24-hour	76.27	73	149.27	150	99
	Annual	22.14	26	48.14	50	96
CO	1-hour	894	3,600	4,494	40,000	11
	8-hour	347	2,300	2,647	10,000	26
SO ₂	3-hour	519	34	553	1,300	43
	24-hour	134	26	160	365	44
	Annual	25	8	33	80	41
NO ₂	Annual	18.5	17	35.5	100	35
Lead	Quarterly	0.00291	0.03	0.0328	1.5	2
a Assumes 100% conversion of NO _x to NO ₂ per 40 CFR 51 Appendix W Guideline on Air Quality Models, screening methodology.						

3.4.2 Toxic Air Pollutants Results

The toxic air pollutant results are presented in Table 8.

Table 8. TOXIC AIR POLLUTANTS RESULTS				
Pollutant	Averaging Period	Concentration ($\mu\text{g}/\text{m}^3$)	Regulatory Limit ($\mu\text{g}/\text{m}^3$)	Percent of Limit
Nitrous Oxide	24-hour	4.38	4.5E+03	0.097
Cadmium	Annual	2.5E-04	5.6E-04	45

3.4.3 Source Contribution

The source contributions for this analysis are presented in Table 9. This table presents the 24-hour (highest sixth high) and annual (maximum) values for each group indicated. These values do not necessarily occur at the same location or time as the design concentration used in the NAAQS demonstration (All group). This gives an indication of which sources are the major contributors to the PM₁₀ impacts.

Table 9. PM₁₀ SOURCE CONTRIBUTIONS TO 24-HOUR AND ANNUAL IMPACTS

Group	24-hour PM ₁₀ H6H Concentration ($\mu\text{g}/\text{m}^3$)	Percent Contribution	Annual PM ₁₀ Maximum Concentration ($\mu\text{g}/\text{m}^3$)	Percent Contribution
All	76.27		22.14	
Kipper boiler	36.7	48	7.79	35.2
Boiler 1	0.97	1.3	0.19	0.86
Boiler 2	0.91	1.2	0.14	0.63
Woodpile	25.4	33.3	7.18	32.4
Heaters	3.1	4.1	0.203	0.92
Others ^a	43.9	57.6	10.95	49.4

a. Others group consists of the following sources: 7020, 7101, 7102, 7019, 7001, 7027, 706, 5037, 5034, 4000, 228, 234, 311, 312, 410/411, 613/614, 615/616, 638, 725, 707, 8, 5000, 5001, 432, 322, 572.

4.0 DEQ Sensitivity Analysis Results

As discussed above, the facility assumed that the heaters would only operate 50% of the time. This assumption was applied to the compliance demonstrations for the following pollutants and averaging periods: PM₁₀, NO_x, SO₂, and Cadmium annual average; lead quarterly average, and nitrous oxide 24 hour average. For this assumption to be accurate this would have to be a federally enforceable limit. The facility did not anticipate operational limits on these sources. To ensure that this assumption did not make a difference in the demonstration of compliance, DEQ performed a sensitivity analysis for this assumption. This sensitivity analysis included rerunning the model assuming the heaters operated 100% of the time for all pollutants and all averaging periods. Table 9 presents the changes in modeling parameters. All other modeling assumptions/parameters used by the applicant remained unchanged in this sensitivity analysis. As seen in Table 10, the results of the sensitivity analysis are essentially identical to those submitted by the applicant. Even though the concentrations increase a very small amount, this does not effect the demonstration of compliance with the ambient air quality standards.

Table 9. SUMMARY OF SENSITIVITY ANALYSIS.

Parameter	Modeling files submitted by applicant	Changed in Sensitivity analysis, presented in application material
Emission rates for the heaters.	Operating 50% of the time	Operating 100% of the time
PM ₁₀ – annual	0.115 lb/hr	0.229 lb/hr
NO _x – annual	1.51 lb/hr	3.02 lb/hr
SO ₂ – annual	0.36 lb/hr	0.072 lb/hr
Lead – quarterly	7.55E-06 lb/hr	1.51E-05 lb/hr
Cadmium – annual	1.66E-05 lb/hr	3.32E-05 lb/hr
Nitrous oxide – 24 – hour	3.32E-02 lb/hr	6.64E-02 lb/hr

Table 10. RESULTS OF SENSITIVITY ANALYSIS.

Pollutant	Averaging Period	Submitted by Applicant	Sensitivity Analysis
PM ₁₀	Annual	22.14	22.27
NO _x	Annual	18.5	19.28
SO ₂	Annual	25	25.46
Lead	Quarterly	0.0028	0.00321
Cadmium	Annual	2.5E-04	2.5E-04
Nitrous oxide	24 – hour	4.38	4.41

MEMORANDUM

DATE: May 2, 2007

TO: Zach Klotovich, Discipline Lead, Technical Services

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT NUMBER: T2-030515

SUBJECT: Modeling Review for the Basic American Foods Tier II Operating Permit Application for their Facility in Rexburg, Idaho

1.0 SUMMARY

Basic American Foods (BAF), a Division of Basic American, Inc., submitted a Tier II Operating Permit (Tier II OP) application for their facility located in Rexburg, Idaho. Air quality analyses involving atmospheric dispersion modeling of emissions associated with operation of the facility were submitted to demonstrate that maximum emissions would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.403.02). Coal Creek Environmental Associates (Coal Creek), BAF's consultant, conducted the ambient air quality analyses.

A DEQ modeling review memorandum for this application was issued from Mary Anderson, Modeling Coordinator, on July 21, 2004. Revised PM₁₀ modeling was submitted to DEQ in October 2005. The revised modeling includes two scenarios for firing the Kipper boiler: 1) fueled with a wood:coal mixture; 2) fueled with wood. Also, as approved by DEQ, the revised modeling excluded fugitive emissions from the wood storage pile. This memo will only address the revised PM₁₀ modeling. The July 21, 2004 memorandum addresses all other criteria pollutants.

A technical review of the submitted air quality analyses was conducted by DEQ. The submitted modeling analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the facility were below significant contribution levels (SCLs); or b) that predicted pollutant concentrations from emissions associated with the facility, when appropriately combined with background concentrations, were below applicable air quality standards at all receptor locations. Table 1 presents key assumptions and results that should be considered in the development of the permit.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES

Criteria/Assumption/Result	Explanation/Consideration
Compliance with the PM ₁₀ NAAQS were demonstrated for firing the Kipper boiler on both wood and a wood:coal mixture.	The submitted analyses included two separate scenarios – one with the Kipper boiler fired by a wood:coal mixture and one for firing with wood only.

2.0 BACKGROUND INFORMATION

2.1 *Applicable Air Quality Impact Limits and Modeling Requirements*

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The BAF Rexburg facility is located in Rexburg, Idaho. This area is designated as attainment or unclassifiable for all criteria pollutants.

2.1.2 Significant and Full Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the facility exceed the significant contribution levels (SCLs) of IDAPA 58.01.01.006.90, then a full impact analysis is necessary to demonstrate compliance with IDAPA 58.01.01.403.02. A full impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the National Ambient Air Quality Standards (NAAQS) listed in Table 2. Table 2 also lists SCLs and specifies the modeled value that must be used for comparison to the NAAQS.

TABLE 2. APPLICABLE REGULATORY LIMITS				
POLLUTANT	Averaging Period	Significant Contribution Levels ^a ($\mu\text{g}/\text{m}^3$) ^b	Regulatory Limit ^c ($\mu\text{g}/\text{m}^3$)	Modeled Value Used ^d
PM ₁₀ ^e	Annual	1.0	50 ^f	Maximum 1 st highest ^g
	24-hour	5.0	150 ^h	Maximum 6 th highest ⁱ
Carbon monoxide (CO)	8-hour	500	10,000 ^j	Maximum 2 nd highest ^g
	1-hour	2,000	40,000 ^j	Maximum 2 nd highest ^g
Sulfur Dioxide (SO ₂)	Annual	1.0	80 ^f	Maximum 1 st highest ^g
	24-hour	5	365 ^j	Maximum 2 nd highest ^g
	3-hour	25	1,300 ^j	Maximum 2 nd highest ^g
Nitrogen Dioxide (NO ₂)	Annual	1.0	100 ^f	Maximum 1 st highest ^g
Lead (Pb)	Quarterly	NA	1.5 ^h	Maximum 1 st highest ^g

^aIDAPA 58.01.01.006.90

^bMicrograms per cubic meter

^cIDAPA 58.01.01.577 for criteria pollutants

^dThe maximum 1st highest modeled value is always used for significant impact analyses

^eParticulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers

^fNever expected to be exceeded for any calendar year

^gConcentration at any modeled receptor

^hNever expected to be exceeded more than once in any calendar year

ⁱConcentration at any modeled receptor when using five years of meteorological data

^jNot to be exceeded more than once per year

2.1.3 Toxic Air Pollutant Analyses

Toxic Air Pollutant (TAP) requirements for PTCs are specified in IDAPA 58.01.01.210. These regulations are not applicable to this Tier II OP application.

2.2 Background Concentrations

Background concentrations were revised for all areas of Idaho by DEQ in March 2003¹. Background concentrations in areas where no monitoring data are available were based on monitoring data from areas with similar population density, meteorology, and emissions sources. Default rural/agricultural background concentrations were used for all criteria pollutants. Table 3 lists applicable PM₁₀ background concentrations.

1 Hardy, Rick and Schilling, Kevin. *Background Concentrations for Use in New Source Review Dispersion Modeling*. Memorandum to Mary Anderson, March 14, 2003.

Table 3. BACKGROUND CONCENTRATIONS		
POLLUTANT	Averaging Period	Background Concentration ($\mu\text{g}/\text{m}^3$) ^a
PM ₁₀ ^b	24-hour	73
	Annual	26

a. Micrograms per cubic meter

b. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

3.0 MODELING IMPACT ASSESSMENT

3.1 Modeling Methodology

Table 4 lists the modeling parameters used in Coal Creek's analyses.

Table 4. REFINED MODELING PARAMETERS		
Parameter	Description/Values	Documentation/Addition Description
Model	ISCST3-PRIME	ISCST3 with the PRIME downwash algorithm, version 03002
Meteorological data	1987 - 1991	Pocatello, Idaho surface data Boise, Idaho upper air data
Terrain	Considered	Receptor, building, and emissions source elevations were determined using Digital Elevation Model (DEM) files
Building downwash	Considered	The building profile input program (BPIP) for PRIME was used
Receptor Grid	Grid 1	25-meter spacing along the property boundary out to 100 meters
	Grid 2	100-meter spacing out to 1,000 meters

3.1.1 Modeling protocol and Methodology

A modeling protocol was not submitted to DEQ prior to submission of the revised PM₁₀ modeling analyses. Coal Creek and DEQ did discuss methods and requirements prior to the submittal. Modeling was generally conducted using methods and data as discussed prior to resubmittal and those described in the *State of Idaho Air Quality Modeling Guideline*.

3.1.2 Model Selection

ISCST3 with the PRIME downwash algorithm was used for the modeling analyses. The PRIME downwash algorithm was necessary because of the close proximity of buildings to ambient air receptors.

3.1.3 Meteorological Data

Pocatello, Idaho, surface data and Boise, Idaho, upper air meteorological data were used for the ISCST3-PRIME analyses.

3.1.4 Terrain Effects

Terrain effects on dispersion were considered in the analyses. Receptor elevations were obtained by Coal Creek using Digital Elevation Model (DEM) 7.5-minute files.

3.1.5 Facility Layout

The facility layout used in the modeling analyses, including the ambient air boundary, buildings, and emissions units, were not checked for this revision. It was assumed that the July 2004 DEQ review adequately evaluated facility layout.

3.1.6 Building Downwash

Downwash effects potentially caused by structures at the facility were accounted for in the dispersion modeling analyses. The Building Profile Input Program (BPIP) for the PRIME downwash algorithm was used to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters used for the ISCST3 analyses.

3.1.7 Ambient Air Boundary

Ambient air was considered as all areas outside of the property boundary fence.

3.1.8 Receptor Network

The receptor grid met the minimum recommendations specified in the *State of Idaho Air Quality Modeling Guideline*. DEQ determined the receptor grid used was adequate to reasonably resolve maximum modeled concentrations.

3.2 Emission Rates

Emissions rates used in the modeling analyses were equal to or somewhat greater than those presented in other sections of the permit application or the DEQ Statement of Basis.

3.2.1 PM₁₀ Emissions Rates

Table 5 provides PM₁₀ emissions rates used in the modeling analyses for both long-term and short-term averaging periods.

Table 5. PM₁₀ EMISSIONS RATES USED FOR AIR IMPACT MODELING		
Emissions Point	24-Hour and Annual Emissions Rates^a (lb/hr)	
	Coal Use	Wood Use
	Short-Term	Short-Term
Kipper	16.25	12.52
Boiler1	0.39	0.39
Boiler2	0.26	0.26
7020	0.41	0.41
7101	2.16	2.16
7102	2.16	2.16
7019	3.39	3.39
7001	0.23	0.23
7027	0.041	0.041
7006	0.122	0.122
5037	0.017	0.017
5034	1.29	1.29
4000	1.72	1.72
228	1.10	1.10
234	0.31	0.31
311	0.29	0.29
312	0.29	0.29
410/411	0.59	0.59
613/614	1.09	1.09
615/616	0.85	0.85
638	0.24	0.24
725	0.0	0.0
707	0.049	0.049
8	0.049	0.049
5000	0.24	0.24

5001	0.049	0.049
432	0.049	0.049
322	0.0	0.0
572	0.187	0.187
HEATERS	0.23 ^b 0.115 ^c	0.23 ^b 0.115 ^c

a. Long term rates assume 8760 hours/year of operation unless noted otherwise

b. Maximum 24-Hour emissions rate divided by 24 hr/day

c. Maximum annual emissions rate divided by 8760 hr/year

3.2.2 TAP Emissions Rates

TAP modeling was not required for issuance of this Tier II Operating Permit.

3.3 Emission Release Parameters

Table 6 provides emissions release parameters for the analyses, including stack height, stack diameter, exhaust temperature, and exhaust velocity. Spot checking indicated the release parameters used in the October 2005 submittal are identical to those used in the originally-submitted application, which was reviewed by DEQ as indicated in the July 21, 2004, memorandum from Mary Anderson. Additional review of release parameters was not performed by DEQ as part of this review.

Table 6. EMISSIONS AND STACK PARAMETERS					
se Point cation	Source Type	Stack Height (m) ^a	Modeled Diameter (m)	Stack Gas Temp. (K) ^b	Stack Gas Flow Velocity (m/sec) ^c
Kipper	Point	20.1	1.2	327	10.6
Boiler1	Point	11.0	0.9	533	14.4
Boiler2	Point	11.0	0.9	533	9.5
7020	Point	21.9	0.5	309	0.001 ^d
7101	Point	21.6	1.1	352	14.2
7102	Point	21.5	1.1	340	13.6
7019	Point	23.3	0.8	330	18.2
7001	Point	20.1	0.4	305	10.6
7027	Point	20.8	0.4	303	10.8
7006	Point	20.0	0.3	305	15.2
5037	Point	20.8	0.7	328	13.5
5034	Point	20.7	0.2	339	13.7
4000	Point	18.6	0.9	333	15.2
228	Point	11.6	1.3	350	10.2
234	Point	10.6	1.2	344	10.2
311	Point	9.5	0.9	324	15.2
312	Point	9.5	0.9	319	15.2
410/411	Point	9.3	1.1	328	7.0
613/614	Point	8.6	0.6	333	16.8
615/616	Point	7.9	0.7	362	13.8
638	Point	8.8	0.4	345	8.8
725	Point	4.2	0.001 ^e	305	0.001 ^d
707	Point	5.1	0.001 ^e	305	0.001 ^d
8	Point	6.6	0.001 ^e	300	0.001 ^d
5000	Point	20.7	0.2	298	7.6
5001	Point	8.1	0.001 ^e	300	0.001 ^d
432	Point	7.0	0.001 ^e	300	0.001 ^d
322	Point	3.0	0.001 ^e	355	0.001 ^d
572	Point	4.7	0.2	305	15.2
HEATERS	Point	9.1	0.001 ^e	294	0.001 ^d

-
- a. Meters
 - b. Kelvin
 - c. Meters per second
 - d. Set to eliminate vertical momentum for a capped or horizontal release
 - e. Set to prevent a calculation of stack tip downwash for a horizontal release

3.4 Results for Full Impact Analyses

Results for the full impact analyses are shown in Table 7.

Table 7. PM ₁₀ FULL IMPACT ANALYSES						
Scenario	Averaging Period	Modeled Design Concentration (µg/m ³) ^a	Background Concentration (µg/m ³)	Total Impact (µg/m ³)	NAAQS ^b (µg/m ³)	Percent of NAAQS
Kipper boiler fueled by wood:coal mixture	24-Hour	65.7	73	138.7	150	92
	Annual	16.0	26	42.0	50	84
Kipper boiler fueled by wood	24-Hour	60.0	73	133	150	89
	Annual	14.8	26	40.8	50	82

a. Maximum modeled concentration in micrograms per cubic meter

b. National Ambient Air Quality Standards

4.0 CONCLUSIONS

The PM₁₀ ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the facility will not cause or significantly contribute to a violation of the PM₁₀ air quality standard. The July 21, 2004 DEQ modeling review memorandum from Mary Anderson provides documentation that the air impact analyses for other criteria pollutants demonstrated to DEQ's satisfaction that emissions of those pollutants would not cause or significantly contribute to a violation of air quality standards.

Appendix C

Basic American Foods, Rexburg

T2-030515

Kipper Boiler PTC Letters



STATE OF IDAHO

DEPARTMENT OF HEALTH
AND WELFARE

DIVISION OF ENVIRONMENT
Statehouse
Boise, Idaho 83720

July 30, 1980

CERTIFIED MAIL #753039

Mr. Frank C. Haas
American Potato Company
P. O. Box 592
Blackfoot, Idaho 83221

Dear Mr. Haas:

This Department has reviewed your July 2, 1980 application for a Permit to Construct a Kipper & Sons spreader stoker boiler, fired with wood waste and up to 39% coal, rated at 60,000 lbs/hr of steam at 325psig, with emissions controlled by a Zurn type MTSA-60-9 CYT-STD-XT multiclone with 112 tubes and a Riley Model A-33-34,000 venturi-rod scrubber, with induced draft fan near Rexburg, Idaho, and is satisfied that the boiler, as proposed, is capable of complying with applicable Rules and Regulations for the Control of Air Pollution in Idaho. Therefore, this letter shall serve as your Permit to Construct the proposed boiler.

This permit is being issued subject to the following conditions:

- 1) Emissions of particulate matter shall not exceed the limits specified in Section 1-1301 of the Rules and Regulations for the Control of Air Pollution in Idaho.
- 2) Equipment shall be source tested for compliance using wood and wood/coal fuel mixtures within 60 days after startup. The Pocatello Office of the Division of Environment shall be notified when the test is to take place.
- 3) Sulfur content of any coal burned shall not exceed 1% by weight.

EQUAL OPPORTUNITY EMPLOYER

Mr. Frank C. Haas
Page 2
July 30, 1980

While the Department is satisfied that your boiler, as proposed, will not violate applicable air quality standards, this Permit should not be construed as a waiver of your responsibility to comply with all local, state and federal rules, regulations and standards.

Sincerely,

for
Lee W. Stokes, Ph.D.
Administrator

Robert P. Olson

LWS/bf
cc: Henry Moran

April 30, 1981

Mr. F. C. Haas
American Potato Company
Post Office Box 592
Blackfoot, Idaho 83221

Dear Mr. Haas:

We have reviewed your April 21 request for an amendment to your July 30, 1980 Permit To Construct, and we believe your request is reasonable. Therefore condition #2 of the July 30 Permit is amended to read:

- 2) Within sixty (60) days after achieving the maximum production rate at which the source will be operated, but not later than one hundred eighty (180) days after initial start-up of such source, the Company shall conduct a performance test in accordance with methods and under operating conditions approved by the Department and furnish the Department a written report of the results of such performance test.

Sincerely,

Lee W. Stokes, Ph.D.
Administrator

LWS/b

cc: Henry Moran



STATE OF IDAHO

DEPARTMENT OF HEALTH
AND WELFARE

DIVISION OF ENVIRONMENT

Statehouse
Boise, Idaho 83720
334-5362

Routed 5-10-84

May 8, 1984

Lyle MP
Loren LS
KSH KSH
MLG D
Ref. to FCH

Copy to
cc to Mr. Gene Lyle
5-10-84

Mr. Frank Haas
American Potato Company
P. O. Box 592
Blackfoot, Idaho 83221

RE: Coal as fuel in the 60,000 lb/h boiler at Rexburg

Dear Mr. Haas:

This will confirm our phone conversation of May 7, 1984. The original permit was based on supply the heat-input with a 50/50 mix of coal and wood. The heat-input basis was converted to a weight-basis, which was the origin of the limit of 39% coal in the fuel, weight basis. You are allowed, therefore, to use coal up to 39% of the total weight of fuel and 50% of the heat input.

An Air Quality Bureau representative will observe the stack when you are firing an increased proportion of coal. If the opacity (darkness) of the plume is over 20%, we will require a stack test to confirm that particulate emissions are within limits.

Sincerely,

Clint Ayer

Clint Ayer
Senior Engineer
Air Quality Bureau

CA/bf

cc: COF 1.1
Source File
Robert Wilkosz, Pocatello Field Office, AQB

cc AXB G BOWEN F. Te

EQUAL OPPORTUNITY EMPLOYER